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Information, Communication and Dissemination of Knowledge

Example: Infofish

by Svein Ottar Olsen

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INFORMATION COMMUNICATION AND DISSEMINATION OF KNOWLEDGE; INFOFISH EXAMPLE

BY

Svein Ottar Olsen *

"Without communication there can be no organisation"

Simon, 1957, page 154

"Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information upon it"

Samuel Johnson

(From Boswell, Life of Johnson, 1973)

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EXTRACT:

In this work we consider different conditions in information and knowledge dissemination. We first started with a theoretical framework (explorative approach) and worked up a model for the build-up and analysis of a market information system. This has been made use of, together with a description and analysis (case study) of a project for market information and advisory services for fish and fish products in Asia and the Pacific region. The project, which has been given the name Infofish, also includes technical advice, and links producers and exporters in the member countries with importers all over the world.

SUMMARY

Information and knowledge dissemination are central tools in the build-up and maintenance of every distribution system. We have in this work touched on different aspects of securing, processing and disseminating information and knowledge.

The first part constitutes a theoretical survey of the building and evaluation of an information system. We have here gone through different approaches to studies of information, communication and dissemination of knowledge in a distribution system. As a method of approach, we have emphasized the system theory by which we study simultaneously the relations between structures (stable traits) and processes (functions) at different levels. We have structured the different dimensions, units or variables, and the relations between these into a single model or frame for a study of market formation systems.

We have utilized the theoretical framework in part 2 for a case study of a project for market information and advisory services for fish and fish products in Asia and the Pacific Region. The project, which has been named Infofish, has the aim of helping the countries in this area to build up a market-oriented fishing industry. The study of Infofish is carried out on the basis of a 2-month stay at the project's headquarters in Kuala Lumpur, where we among other things went through archives and plans, status reports and other similar sources. In addition, we also interviewed the project staff in the office. During a round trip in the East, we also had the opportunity to visit four

of the project's regional offices, in addition to interviewing six to seven users of the project.

The principal decision and information areas which Infofish has taken up, are market information and technical advice. In their operations, their work is directed towards the following target groups:

- Producers (the industry) in Asia and the Pacific region (the project region)
- Exporters in the project region.
- Importers throughout the world.
- Public authorities in the project region.

As a starting point towards the project's objective, they have established a network of regional offices in the individual member countries and a steering and advisory group to co-ordinate the activities of the project. The main activities are carried out and organized through three different departments.

The department for market information concentrates its activities on the strategic areas for the users in the distribution system. They disseminate information concerning the majority of project tasks, with emphasis on market development, product development, marketing methods together with processing and equipment technology. This information is disseminated via the Information Marketing Digest magazine, special reports and publications.

The department for trade promotion is established

to encourage trade transactions between members. By means of letters, telephone and telex, buyer and seller of fish are linked. The department also issues a price and market report (Infofish Trade News) every fourteen days.

The department for technical advice is established to deal with the problems and possibilities production companies face in order to satisfy the demands of the markets for refining and distribution of fish and fish products. It arranges courses and training programs in product development, quality control, production technology etc.

The project has developed a well organized feed-back apparatus, to ensure a better administration and control of the project. The results of two surveys indicate that the different services are well received by the user groups. After our stay at the project, we are left with the impression that the project carries out its responsibilities in an effective and goal-oriented manner.

Even though we have had interviews with some users, the resource-oriented parameters of this work have not left room for mapping the project's external effectiveness, i.e. whether Infofish takes the right initiatives to develop the fishing industry in the project region. An interesting question in this connection is whether the project helps the right target groups or if it only is of help to those who can quite well manage for themselves without foreign assistance? We consider that a mapping of these relationships is a central task, with special thought to the future position of the project as a self-supporting economic entity.

PREFACE iii

Data, information and knowledge are increasingly important factors of modern trade. They are central in matters to do with trade and distribution - a fact that has also become apparent in foreign aid. In this work we consider different conditions in information and knowledge dissemination within the field of market information. We start with a theoretical framework and develop a model for the build-up and analysis of a market information system. We use this framework to describe and analyze a project for market information and advisory services on fish and fish products in Asia and the Pacific region. The project, which has been given the name INFOFISH, also provides technical advice and links producers and exporters in the member countries with importers all over the world.

The costs of a two-month stay at the head office of the project in Kuala Lumpur and visits to 4 regional offices within the project area were covered by Norway's Export Council, FTFI, NFFR and the Export Committee for Fresh Fish. We thank all these and others who assisted in the study. Special thanks are extended to the staff of Infofish head office who willingly let me search their files and offered all the assistance that I needed.

Those who are not interested in theory and model development but who wish to know something more concrete about an information system, can skip Part 1. Even though we use a theoretical framework while discussing Part 2, these two parts can in our opinion be read independently of each other.

Tromso, September 1983
Svein Ottar Olsen, B. Com.

*Numbers in the right-hand margin indicate the corresponding page numbers in the original. Translator's note.

1. INTRODUCTION 1

Data, information and knowledge are increasingly important factors of modern trade. Whether companies are large or small, function within regions or carry on extensive export operations, information dissemination is a pivotal factor in the building and maintenance of any distribution system. We will in this work discuss various aspects of the gathering, processing and dissemination of information and knowledge. We will first conduct a theoretical survey of the building and evaluation of an information system and thereafter use part of the theory in a case study of a project to build and develop trade in fish and fish products in Asia.

Over the course of the last few years, a number of countries have extended their nautical areas by announcing a 200-mile fishing zone. This has had effects such as that a number of developing countries have new opportunities, now that they themselves have control over areas with considerable fish resources.

In one of the most important fishing areas of the world - Asia and the Pacific region - the extension of the fishing zone has created new opportunities for most of the 26 developing countries of this area. Up to now, fishing in this area could be characterized as labor-intensive, it consisted of small units, had a low level of production and quality, primitive fishing equipment and vessels, a limited fishing range, a poorly developed marketing and distribution system, a low degree of mobility and a low degree of processing (MPEDA, 1983).

The above problems combined with an increasing need for food for a growing population as well as the need to have foreign currency have made the development of a fish-processing industry an important priority. The success of this industry is not dependent on the supply of fish as raw material alone. The main goal of a number of these countries to develop a

market-oriented industry will give prominence to information on potential potential markets, their products, prices and distributors. Information on a modern production and distribution technology is also required to satisfy an increasingly discriminating public for fish products. 2

The lack of this information puts producers and distributors at a disadvantage when they are dealing with established importers and competitors. To help a number of countries in Asia and the Pacific region to develop a market-oriented industry, the Food and Agriculture Organization, FAO, of the United Nations established a project for market information and advisory services for fish and fish products in this region. The project is called INFOFISH and has its headquarters in Kuala Lumpur, the capital of Malaysia. Its main goal is to gather, process and distribute market information to its member countries. Secondly, it gives technical advise to its members (Krone, 1981). Contact with member countries is strengthened by means of regional offices established by the governments of the different countries.

Before describing and analyzing the INFOFISH project, we will conduct a general, theoretical survey of various problems associated with information, communication and dissemination of knowledge in a distribution system. Our method of approach will be a system theory in which we study the relationships between structures (stable traits) and processes (functions) simultaneously at different levels.

We will begin with a general survey of information systems, clarify central concepts, and discuss various aspects of information. A simple model to build and analyze an information system will be developed. The model will first identify different decision-making areas or functions in an organization (e.g. production and sales). We will then outline different levels at which decisions may be made, be it within the organization (strategic or tactical level) or between organizations (producer, wholesaler, retailer, exporter or importer). 3

Methods to map the needs and goals of the different decision-making units will be central in our discussion of the project. Having established potential needs, it should be ascertained that the right information reaches the right recipient at the right time and in the right way. The latter is called adaptation of the system, in which connection we hope to map the agreement of goals and results (effector criterium).

In the last part of this paper, we will use our theoretical framework to describe and discuss the internal structures and processes of the Infofish project, the goals set and the results obtained, as well as to look at the possible development of the project. This part is prepared on the basis of a 2-month stay at the project where we perused files containing plans, status reports, etc., and on the basis of several interviews and discussions with the project staff at the head office. We also had a chance to visit 4 of the regional offices of the project where we for instance interviewed the local staff. It was not feasible, within the framework of this assignment, to map the external effectiveness of the project in a satisfactory manner, e.i., whether the project is doing the right thing or how well it is doing its job from the point of view of the users. In connection with another assignment, however, we managed to carry out unstructured interviews with 6 importers and exporters who were regular users of the project. The results of these discussions are integrated into the empirical part. However, we consider it important that a more complete user analysis be initiated.

We endeavored as much as possible to separate the theoretical part (Part 1) from the empirical part (Part 2) in such a manner that they can be read independently from each other.

2. INFORMATION AND COMMUNICATION IN A SYSTEM PERSPECTIVE 4

"Information" is a somewhat unclear concept that is often seen used in different ways. A general and useful definition to use in contexts involving information systems is taken from Davis (1974):

> "Information is data that has been processed into a form that is meaningful to the recipient and is of real or perceived value in current or prospective decisions".

We note that data is the raw material of a process that produces information. Information is also strongly associated with the decision-making process and can also be seen as the foundation of decision-making at a higher level than the data. What is information for one person can be raw data for another at another decision-making level.

The concept "information theory" has traditionally been associated with the mathematical communication theory (closed system theory). These theories have concentrated on the technical level (how exactly can information be transmitted) and not on the relationship of the information to the environment or the external effectiveness: how precisely do the transmitted symbols render the meaning to be communicated? How good is this message in motivating individual or organizational action? Before we move on to outline an information system, we will briefly indicate what the concept system theory signifies.

2.1. Building of a market information system

A system is defined as a set of objects with a connection between the objects and their symbols (Hall and Fagen, 1958, pp. 8). In this definition, the idea of a set of objects and the relationships between them is central.

The institutional approach deals with the objects (structure), while the functional approach concentrates on connections between the objects (functions). The system approach occurs when we study structures and functions (processes) simultaneously.

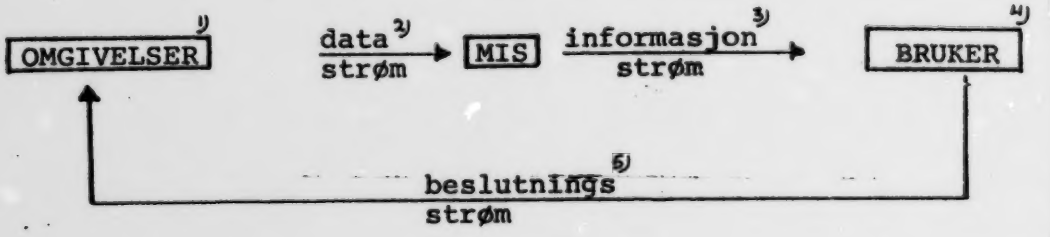
Since each organization is an arena with a number of information flows affecting the different decision makers, we will attempt to limit our discussion to market-related information. The reason for this is the fact that the main goal of the system, Infofish, which we will deal with in the last part of the report, is precisely the dissemination of market-oriented information. If an organization wishes to systemitize such information, it will establish a formalized market information system:

> "A structured, interacting complex of persons, machines, and procedures designed to generate an orderly flow of pertient information, collected from both intra and extra-firm sources, for use as the basis for decision making in specified responsibility areas of marketing management" (Kotler, 1980; 602).

The figure below shows the main components of a market information system (MIS):

Figure 1. Components of a market information system.

Key: 1) ENVIRONMENTS 2) Data flow 3) Information flow 4) USER 5) Decision-making flow



Figur 1. Komponentene i et markedsinformasjonssystem.

As shown above, the market information system is the connecting link between the environment and the user. There is a data flow from the environment to the MIS of a company. This system processes data into information that goes to the relevant executives and decision-makers. On the basis of this information, plans, programs, control functions, etc. are developed that become part of the decision-making flow that we have outlined going back to the environment. 6

The need for market information arises when one of the parties of the trading process cannot come to a satisfactory decision, i.e., when there is an uncertainty of such a magnitude that the decision is not considered any better than a casual choice. The concept of uncertainty has been used under various labels (technology, complexity, turbulence, uncertainty, etc.). The central characteristic of most terms is that the uncertainty is associated with the tasks the individual intends to decide on. It is also clear that the tasks alone do not decide the degree of uncertainty. Galbraith (1979) has defined uncertainty as

> "the difference between the amount of information required to perform the task and the amount of information already possessed by the organization".

Factors that have significance in terms of the uncertainty experienced include the range of the goals (different products, markets, clients) or the level of performance with regard to time, profit, etc.

The literature on communication distinguishes between different types of communication flows or systems, vertical versus horizontal communication, communication that flows up or down (Hall, 1974). Kotler (1968) distinguishes between three different communication flows:

1. Market intelligence (inward information flows) is the flow of information from the environment to the company.

2. Internal market information (inner information flows) consists of information flows between different units of the company.

3. Market communication (outward information flows) is consists of information from the company to the environment. 7

It should be noted that the system and the definitions outlined above are part of a crucial aspect of systems analysis, i.e., the aspect of looking at organizations as open systems or as "input, throughput and output systems" as they were first introduced by Katz and Kahn (1966). We will in this assignment distinguish between a microapproach (internal communication and decision-making - throughput) and a macroapproach (external communication - input/output).

One of the structures that has been used to tie together the different functions that exist in the production and sale of goods and services has become known as the term "distribution channel". A distribution channel can be seen as a set of institutions that carry out all the activities (functions) required to move a product and its image from the producer to the consumer (Bucklin, 1966, pp. 18). The identification of the different functions (production, information, decision-making, etc.) will constitute the first step in our model. Our next task will be to indicate the different levels at which the different functions can be carried out. This is analyzed in the form of a distribution system. From such a perspective, we can talk about information between producers, channel members (wholesalers, retailers, brokers, exporters, importers) in different environments and across national borders. The figure below illustrates some possible information flows in a trading process (Figure 2).

As shown in the figure, there are several possible sources of information helping to maintain a distribution system. A system like Infofish, established to help the fishing industry of a region, will be dependent on

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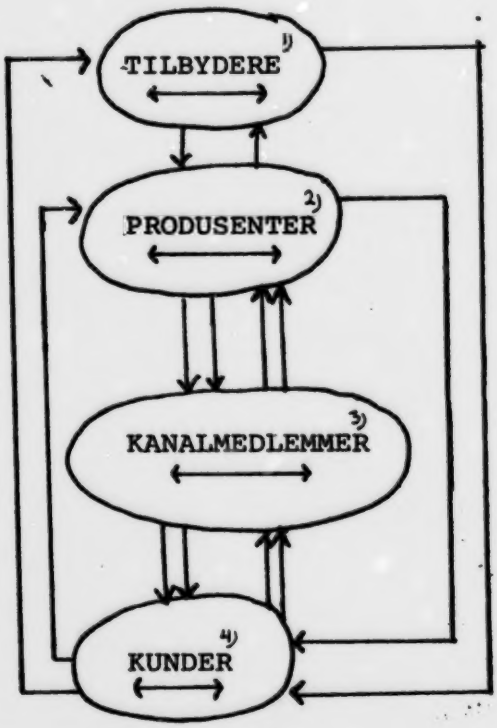
information from or about the different levels of the system. The industry should in our opinion be seen as a distribution system. An essential task of an information system is therefore to map the needs of various target groups, not only within the system, but also at different distribution levels. We will later discuss in more detail questions as to what the target groups are and what needs they have. Our next step is to see how communication works. 8

Figure 2. Market information flows at and within different levels in a distribution system.

Key: 1) SUPPLIERS 2) PRODUCERS 3) CHANNEL MEMBERS 4) CLIENTS



Figur 2. Markedsinformasjonsstrømmer på og innen ulike nivåer i et distribusjonssystem.

2.2. The communication process within a system perspective

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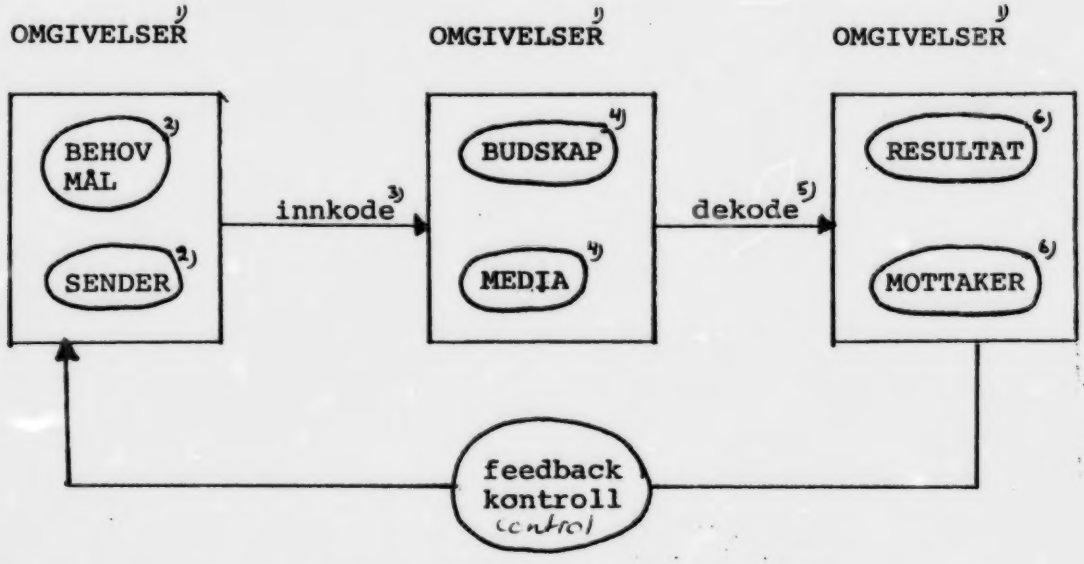
Laswell (1948) assumed that communication involved five main questions: Who...says what...in which channel...to whom. Communication can be seen as consisting of a sender who transmits a message through the media to a recipient who answers. We have constructed a simple graph of a communication model in the figure below.

Figure 3. Components of a communication model.

Key: 1) ENVIRONMENT 2) NEEDS. GOALS 3) code 4) MESSAGE. MEDIA 5) decode 6) RESULTS. RECIPIENT



Figur 3. Komponenter i en kommunikasjonsmodell.

The model consists of nine elements of communication. Two of these - goals and results - are planning and control elements. Senders and recipients (target audience) represent the main actors in the communication channel. The two main means at the different communication levels are the message and the media. The three remaining components represent communication functions. We

think that each of the different components can be studied at different levels in our model: between individuals, between groups internally within organizations, or between organizations and their environments.

Like most practical theories on behaviour, this model is also one of those that sees action as goal-oriented and rational. Seen from this point of view, the model shows elements of an effective communication process. The sender must know which recipients he wants to reach, what this recipient possibly wants, and what effect is desired. He must have experience in the gathering and processing of data at the same time that he must take into account how the recipient interprets the information mediated. He must transmit the message via effective media that reach the recipient at the right time. Lastly, feedback channels must be developed so that it can be ascertained whether the message reaches its destination and what results it evokes. This feedback will also constitute input for the subsequent information strategy of the sender.

Such a model is a great help for our purpose of discussing the different elements and their possible relationships. Basing ourselves on the above outline, we will now discuss in more detail the different steps or elements to plan, analyze, or evaluate a market information system. The method that we will use is briefly described below.

1. Identification of the main decision-making areas of the system; What can the information needs be?

2. To identify at which level these decisions can be made; Who is the main recipient?

3. To identify the mission of the system; What is the information needs and what effect do we wish to achieve?

4. Adaptation of the system; What messages or information shall be developed? What media shall be used? What source symbols shall accompany the message? What information characteristics are necessary?

5. To manage and control the system; What feedback shall be gathered?

The maintenance and management of the system (item 5) will be briefly discussed in this assignment. We have outlined the different elements from a rational planning point of view and not the way a message flows in the communication process (from the sender to the recipient). We must assume that under realistic circumstances this is a process where the different steps do not always follow each other in a time sequence and where functions within the different areas also vary from period to period. It cannot be ignored that we can face a number of more incidental decision-making processes, e.g. when we have solutions looking for problems (cf. Cohen, March and Olsen, 1976). We believe that this is particularly pronounced in information dissemination, because information has several properties that make rational advance calculations difficult. For instance, information has surprise value, not all information transmitted has value, and the value of information cannot be calculated until it has been received (Davis, 1974). 11

3. INFORMATION AND DECISION AREAS

Within a systems perspective, the study of flows, functions or activities in the market and in distribution contexts is important. By mapping the different activities, connections between them and their significance in information contexts over time, we can get a good starting point for an analysis of what the information needs may be. We will in this part only give examples of different functions that may take place in a company or a distribution system. We would like to point out that the distribution literature uses flows in a channel system synonymously with functions. We also say that producers, wholesalers, retailers or other members of a distribution system exist to carry out certain functions.

It is usual to distinguish between functions that flow forward, backward or in both directions. Information, negotiations, financing and risk-taking can be examples of the latter. Physical production, ownership, distribution and sales are typical functions that flow forward in the system, while ordering and paying are examples of the opposite. All these functions are indispensable, i.e., at least one individual, institution or company within the system must be responsible for these for the distribution system to function at all: you can eliminate an intermediary but you cannot eliminate its function. A growing range of goods, a shorter lifespan of products and longer physical distribution routes have had the effect that there are more specialists for the different functions.

The order of importance of these flows varies over time and from company to company. Many will stress, however, that resource and information flows are the main flows when we study connections or contacts between companies (Van de Ven, 1976). At least three good explanations can be given to support the correctness of the claim. Firstly, resource and information flows are the main elements in an organized form of behaviour. Secondly, systems

theoreticians have emphasized the significance of task-oriented and maintenance-oriented activities between and within companies. The task-oriented functions are expressed in resource flows. Conversely, the maintenance functions are expressed in information flows. If information is not exchanged to maintain or integrate the physical flow of goods, it is highly probable that one or several companies lose sight of the goals they one time must have had to participate in mutual trade between organizations or clients. Lastly, these flows are eminently suited for studies at different levels, which we will put to practical use in this assignment. We mean by that the flows can be studied within the framework of a company, between groups of companies, or as larger social systems. 13

The information flow is closely connected with the decision-making flow (See Fig. 1). If we use the production of goods as our starting point, we can divide the central functions of a company into purchasing, production, distribution and sales. Our focus will essentially be directed toward the last link of this chain (the marketing and distribution component). As an overview and to systemitize the different decisions that are made in the marketing component within or between companies, "marketing mix" variables are often used. Kotler (1980) defines a marketing mix as a set of controlled variables (and their level) that the company uses to influence its target groups and markets. Several attempts have been made to develop a list of the main variables of marketing. McCartny (1960) popularized the factor classification, which got the nickname "the four Ps" - product, place, promotion and price are to date the most frequently used. Product characteristics include quality, appearance, brand, packaging, size, service, etc. A good number of these decisions are based on technical information on product and process development. Distribution decisions require information on matters such as physical distribution possibilities and consequences (location, storage and transport). Kotler (1980) points out that decisions on the selection or adaptation of a distribution channel are among the most critical of marketing decisions, firstly, because they affect all other 14

decisions and, secondly, because they have long-range consequences for the company in question. Information on prices, reductions, payment and credit conditions have always had central importance in marketing. Different sales and advertising drives have in the last few years gained an increasingly important place in the management and leadership organs of enterprises. We must assume that information on the effect of different marketing strategies will only increase in the coming years. Similarly, client preferences for product characteristics will be continuously monitored.

The decisions that we are talking about must be examined at different levels of analysis and organization. The further we move beyond the boundaries of an enterprise, the more limited is the ability of this organization to affect or manage these variables (Child, 1972). In many situations, the only thing a company can do is to adapt to its environment and to accept limited choices (Aldrich and Pfeffer, 1976).

4. DIFFERENT DECISION LEVELS IN A DISTRIBUTION AND INFORMATION SYSTEM 15

The other dimension in our description of a communication system for marketing and distribution purposes is to identify at which levels the different decisions are made.

Van de Ven and Astry (1981) differentiate between the microlevel, i.e., individuals or substructures within an organization, and the macrolevel where organizations or networks of organizations are examined. Hage (1980), on the other hand, differentiates between three different organizational levels: micro (social positions and groups), meso (organizations) and macro (several organizations and their environments). Based on the purpose of our analysis, we will differentiate between three levels:

1. The internal information system will deal with the gathering and processing of information internally within organizations.

2. Communication in distribution channels will deal with communication between companies, and between a company and its socioeconomic environment.

3. The international distribution and communication will deal with the special conditions that companies face when they enter or operate on international markets.

In relation to the theoretical approaches we mentioned in the beginning, the first could be characterized as the microlevel, while the latter two look at communication from the macroperspective.

The purpose of the differentiation between levels and decision areas is to help in the identification of different target groups and their needs and, secondly, to adapt different information for these target groups, which is in other words a form of market segmentation according to demand and needs.

4.1. Internal information system

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A company will often choose between alternative ways to structure its activities to perform given concrete tasks. In the case of information processing, Galbraith (1979) differentiates between strategies to reduce the need for information processing, and strategies to increase the capacity to process information. Examples of the former are environmental management, creation of slack resources and creation of self-contained tasks. The capacity to process information can be improved by investing in vertical information systems or by creating lateral relations. The uncertainty experienced and the performance level expected from the organization will to a large extent decide which combination of these is selected.

Should an organization take the step of establishing its own market information system, Kotler (1980) distinguishes between four components in such a system. The internal accounting and reporting system deals with orders, sales, stock, receiving, invoicing, etc. The marketing intelligence system disseminates information about the development and changes in the environment to the management, while the marketing research system deals with specific studies on marketing opportunities, effect of different marketing strategies or marketing problems. The fourth and last component is the marketing-management science system whose main goal is to develop and maintain models to explain, predict or improve marketing processes.

We are not saying that all these functions should be performed by all companies in a distribution system, but for the information gap between the producer and the consumer to be bridged, someone in the system should ascertain that these activities are carried out, promoted and coordinated. Infofish is in fact an example of a project that was established to carry out some of the above functions so that firms that do not have sufficient resources to establish all the components of a market information system can nevertheless have access to market-related information.

A frequently-used approach to market information systems is to group activities and information dissemination according to management activities (Ansoff, 1965) or decision areas (Lund and Lorentzen, 1980). The different levels of the planning and control hierarchy of management are often systematized into three levels as follows:

1. The strategic level deals with decisions relating to products to be produced, markets to be covered, etc.

2. The tactical level is occupied with decisions relating to the selection of resources necessary to carry out the tasks or to attain the goals that are established at the strategic level.

3. The operational level deals with decisions relating to the effective use of resources to carry out the tasks.

The latter two activities are often combined in that they both deal with more routine problems of a more short-range character. Strategic information processing often handles a smaller volume of non-routine information and deals with fundamental problems. Strategic decisions need more information from the environment, are less concerned about precision, and have a longer time perspective than tactical decisions. In other words, there are several distinct differences between the information characteristics of strategic and operational decisions, which we will discuss again in Chapter 6.

4.2. Communication in distribution channels

In today's economy, producers do not themselves sell their products directly to consumers. Between the producer and the user, we often find a channel structure or a set of institutions, companies or individuals via whom the product or information must pass on its way to the ultimate consumer. This structure may in some instances be very complex and may be seen as a set of self-contained, but interdependent, players who are involved in a process to make goods and services available to consumers and to satisfy their needs. It should therefore also be emphasized that a distribution system not only aims to offer goods and services in the right place, the right quantity, the right quality and price, but is also involved in stimulating demand by means of marketing activities (advertising, etc.).

The number of links that a commodity must pass through from the producer to the consumer depends on a number of conditions to do with the product to be distributed and the peculiarities of the transaction itself, i.e., how often a transaction takes place, how uncertain it is, or how much investment it

ties up. It also depends on a number of conditions to do with the individuals or organizations involved, and general environmental conditions (political, economic and social conditions). Under the norms of rationality, however, a company will adapt in such a way that it rationalizes the transaction costs to as large an extent as possible (Thompson, 1967; Williamson, 1979).

Theories on transaction costs deal with management systems ranging from free markets (free competition) to a hierarchy (administratively vertical system). A number of alternatives featuring different agreements and collaboration arrangements exist between these two. The usual grouping in a distribution system differentiates between the producer, wholesaler, and retailer. Players such as agents, brokers and commercial firms are often also found. 19

Studies of ~~tha~~ the different phenomena of distribution channels have produced different paradigms or orientations. Most studies were traditionally carried out on technical or economic conditions such as physical distribution, sales drives, remuneration systems, pricing, etc. (Stern and Reve, 1978). These studies looked at channels as economic systems only. These perspectives have later been expanded to also take into account social and behavioral conditions in the studies of distribution channels. Stern and Brown (1969) were among the first to hypothesize that channels are first and foremost social systems and then economic systems. A variety of this approach is to also take into account political factors in an economy (Stern and Reve, 1980). They claim that a number of factors of both economic, and social and political kind affect the collective behaviour and result. A distribution system can therefore not be seen or studied in isolation from the environment that it is part of.

4.3. International communication and distribution

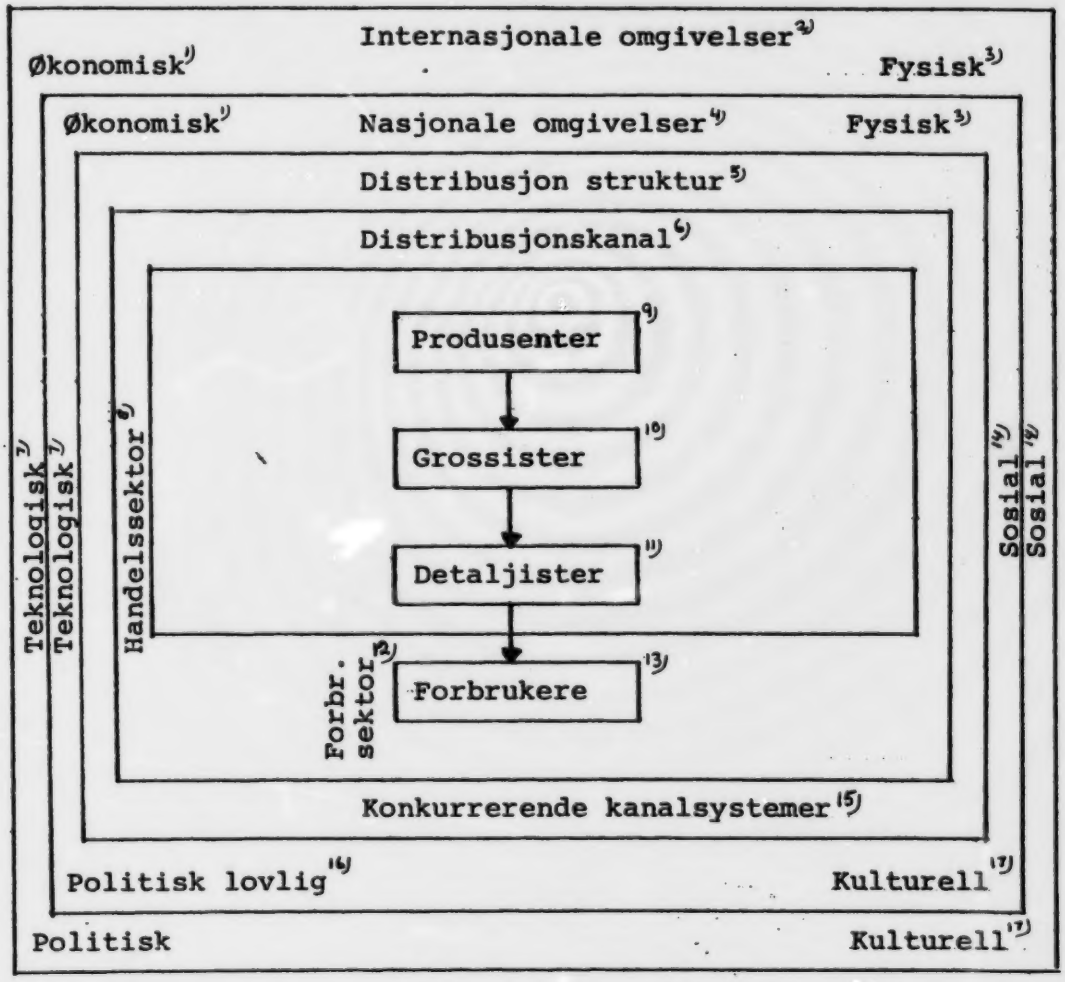
A distribution channel can be understood to have its own identity separate from its members. It can also exist as a part of an economic distribution structure that contains other channels and political systems. We can also see the economic distribution structure as a subsystem of the national environment that again is a subsystem of the international environment. Both the national and international environments consist of physical, economic, social, cultural and political subsystems that affect the system or systems that we wish to study. The figure below gives an idea of how the whole thing is meant to fit together.

The number of levels in the channel shapes its length and often makes the 20
network more complex. When a company goes abroad with its products, such can be precisely the case. There seem to be four main ways to proceed to expand into international markets, although there are naturally a number of variants within them (Stern and El-Anzary, 1982). The simplest form is to export the product. The exporting can be carried out directly through foreign distributors or agents, by establishing foreign sales units, by using sales companies, domestic export companies, etc. The other form is to establish 21
joint ventures in that two or more firms join forces to establish a company, sharing the risk and the economic responsibilities. This form is much used in the fishing industry in a number of countries. The last two ways of proceeding are by licencing and by direct investment in production and distribution units in other countries. The various solutions have different advantages and disadvantages, which should be an absolutely crucial topic when the distribution strategy of a company is discussed. The figure below lists some of the possible alternatives mentioned.

Regardless of which road the company follows, an international marketing manager will face the problem of structuring and implementing a distribution

Figure 4. A distribution channel as a subsystem within different environments.

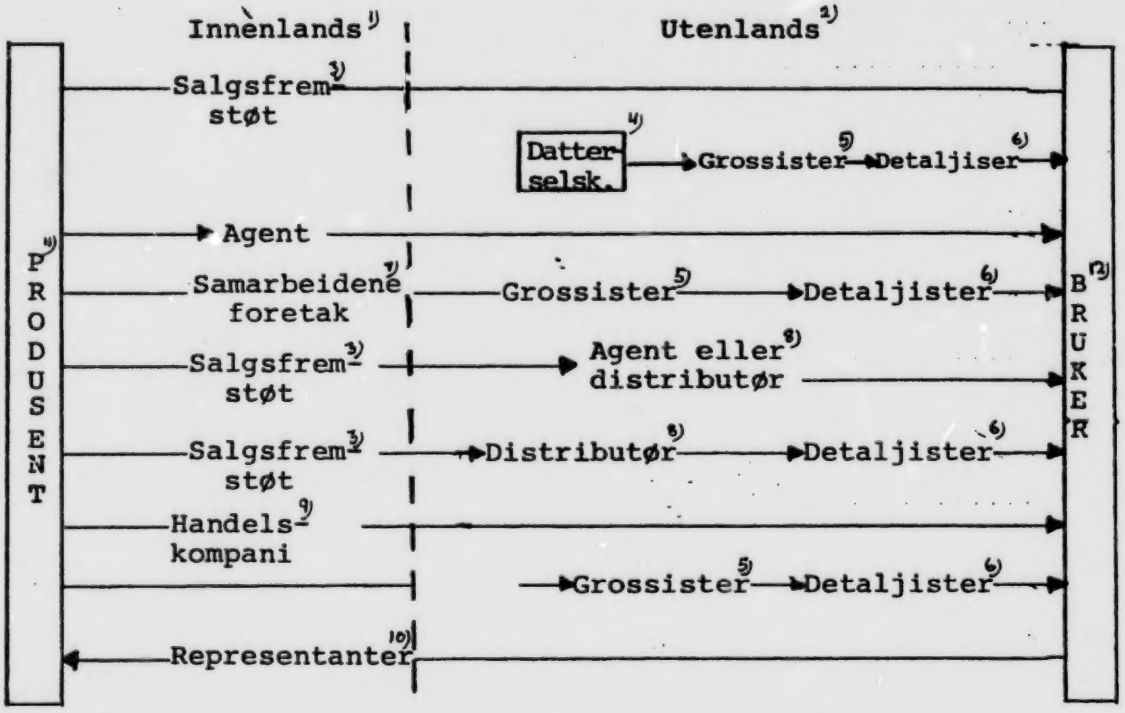
Key: 1) Economic 2) International environment 3) Physical 4) National environment 5) Distribution structure 6) Distribution channel 7) Technological 8) Commercial sector 9) Producers 10) Wholesalers 11) Retailers 12) Consumer sector 13) Consumers 14) Social 15) Competing channel systems 16) Political/legal 17) Cultural



Figur 4. En distribusjonskanal som et delsystem innen ulike omgivelser.

Figure 5. A selection of possible marketing channels.

Key: 1) Domestically 2) Abroad 3) Sales drive 4) Subsidiary 5) Wholesalers 6) Retailer 7) Collaborating companies 8) Agent or distributor 9) Commercial company 10) Representatives 11) PRODUCER 12) USER 13) Source



Kilde? 13) Ruel Kahler og Roland Kramer, International Marketing, 4th ed. (Cincinnati, Ohio: Southwestern Publishing Company, 1979), p. 169.

Figur 5. Et utvalg av mulige markedskanaler.

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and communication strategy. Similarly to the physical distribution system, the elements of an international information system are often longer and more complex. The system will also have a wider perspective in both time and space (Dateora, 1983). 22

Different technical, legal, economic, political or cultural conditions will affect the communication process and the system directly or indirectly. One of these factors is different languages. Languages are often well developed

when it is a question of describing and communicating concrete characteristics, but become less precise when non-standardized conditions are to be described (March and Simon, 1958, pp. 164; Boulding, 1953, pp. 136). However, language is not only a matter of translating words or sounds; it is also a reflection of the culture of the country. A person from one culture may have problems communicating with other cultures even if he has learned the language. We must therefore assume that the more translations we undertake (or the more cultural boundaries we cross), the more noise we will have in the communication process. The communication problems do not become any easier when we face countries with a number of different languages, a situation that is very common in several developing countries.

5. AN INFORMATION SYSTEM'S TASKS 23

In this and the subsequent chapter, we will deal with the tasks, or mission, of an information system. The concept mission is usually used when we not only wish to include the goals and domains of an organization but also the results or effects. The reason for this is that we wish to distinguish between the concepts "goals for organizations" and "goals of organizations" as Thompson (1967) pointed out in his studies. If we look at Infofish, the mission of this project will be determined by demands from the environment (different companies, governments, or populations in the different member countries) or the philosophy that the managers of the project or sources of financing (UN, FAO or project staff) support.

Thompson (1967) defines the goals for an organization as the intended future domains for the organization. Domains can be described as four main dimensions (Thorelli, 1977)

- area (region, country, district)
- product (information, advice, knowhow, agreements, magazines)
- performed functions (information and service dissemination, research, publicizing
- clients (producers, distributors, exporters, importers).

Theoretically, an information plan is set up or structured to satisfy the information needs of different decision makers. However, due to the abstract character of information and the fact that the decision makers do not understand clearly their information needs but only the information that is available, this seems to be an impossible task. Pfeffer and Salancik (1978) point out that the available information constitutes the foundation for what the company assumes to be important at the same time that it naturally is the information used by the decision makers. 24

> **"The availability of information will create a demand for information. It is evident that the information system creates a demand for certain details, as well as their supply".**
> **(Pfeffer and Salancik, 1978, p.75).**

The significance of information to individual needs and behaviour has been discussed for instance by Salancik and Pfeffer (1978). They use a social information-dissemination perspective in describing attitudes toward work and duties. Egeloff (1982) has used a somewhat similar approach in a study in which he looks at connections between information strategies and structure in multinational companies. These studies give us several examples of the fact that attitudes, needs, capacity and choice of market information or services are not at all easy to map and explain. Information disseminated from the social environment turns out to have great importance for action. An indirect effect of the information dissemination that a project such as Infofish performs may be an important catalyst for social information exchange at the same time that it also creates a demand for further information that was previously not known or not regarded as necessary.

It is common to talk about a hierarchy of goals and means in studies of organizations. What is called a goal on one level, is a means on a lower level. The most common goals of a society may be resources utilization, equal distribution of goods, work for all or balanced trade for the country. The goals of an individual company, which from the society's point of view can be seen as means to attain its goals, may be profit, growth, increased market share, spreading of risk or innovation. It is not uncommon to include quality as a main goal for units producing goods and services, either (White, 1981, Hage, 1980). Conflicting goals are not any uncommon phenomenon in most environments, either.

The tasks of organizations are also determined by the philosophy of the dominating coalition, its understanding of the environment and the capacity (resources) of the organization. It is of great interest to see to which extent companies that are to a lesser degree dependent on selling products at market prices, e.g. because they are financed by external sources and not by those who receive the services, fulfill the tasks that they are charged with and whether the philosophy of the leaders corresponds to the demands and expectations of the environment. 25

The third condition that should also be discussed is the difference between the forecast goals and the actual operative goals - what is it that the company actually does? Does it prioritize correctly - does it do the right things? With these question we come directly to the problem of effectiveness and performance evaluation.

5.1. Performance evaluation

Performance is a concept with a number of dimensions. We usually distinguish between performance at different levels, and between external and internal evaluations. The different perspectives overlap each other and the distinctions are not exact.

Our first dimension, the effectiveness of an organization, is its capacity to create an acceptable product or activity. It is important to distinguish between the effectiveness and the efficiency of an organization, which are confused more commonly than most people realize. The difference between these two concepts is the essence of the distinction between the external versus the internal approach of organizational studies.

The effectiveness of a company is an external standard on how well the company meets the demands of different groups and organizations involved in its activities. This can be related to Thompson's description of the "goals for organizations". The most important aspect of this goal of effectiveness is that the evaluation is carried out by people outside the organization itself. This is not to say that each organization is at the mercy of its environment. Organizations can also manipulate, influence and create acceptance for themselves and their activities. The effectiveness of a company is also a sociopolitical question. 26

The efficiency of a company is an internal performance standard. The question of whether it does the right things is not dealt with, but whether it does its tasks right. Efficiency measures the relationship between the use of resources and goods and services produced (output). Stern and El-Ansary (1982) distinguish between two goals of efficiency: efficiency and profit. While efficiency is concerned with physical effectiveness (sales volume, growth of volume, etc.), profit deals with financial effectiveness (profit margin, return on investments, etc.).

An important question of performance evaluation is the underlying cause-and-effect relationship (Thompson, 1967). In a complex, open system, stimuli often have several effects in different directions as well as different time effects. The effects that we study may have their explanations in entirely different stimuli from what we are occupied with.

6. ADAPTATION OF THE SYSTEM 27

We have until now discussed the significance of understanding market information from a distribution perspective. We have for this reason discussed various target groups. Their information needs vary depending on the tasks and functions they are meant to perform. Our problem is also to bring information and media from different sources to the right target groups in such a way that the desired effect is achieved. Important questions that deserve to be posed in this context are for instance: what information or message shall be used and which characteristics should this message have? Which media are most suitable and which symbols characterizing the source should accompany the message? We chose to focus our discussion on the first questions.

Companies on the international market form the framework for the amount of information that we will focus on. Cateora (1983) divides the international market intelligence and research into three different groups based on different information needs.

1. General information on the country and/or the market.
2. Specific information that is needed to solve problems relating to advertising, pricing, distribution and product development.
3. Prediction of future market demands through the anticipation of social, economic and consumer trends within specific markets.

A study by Steven E. Permut (1977) analyzes how companies in different countries use their information and research funds. Work to gather and process general information was rated highest and accounted for 38% of the total research and information budget of West European companies, while the corresponding figure for American companies was a mere 6%. Information on 28
products was considered essential in both areas (about 35% of the budget).

Another interesting observation was that USA firms rated syndicated information (Nielsen research) as the next important item, at 23% of the information budget, while companies from western Europe used only 5% on such information.

Keegan (1980) describes the subject agenda, or a list of themes for different information, as the main element of an international market information system. It is not possible to set up an ideal or a standard scheme as the subject agenda of each company should be developed in accordance with the specific needs and objectives of the firm. Any framework is therefore just a starting point to contruct a specific theme or subject agenda for a specific organization. We chose to look at this approach as analogous to our decision-making areas that we listed in the beginning of our model for the analysis of information systems. Keegan's general framework consists of 5 main information agendas or 24 information categories. The most important of these five agendas is market information. This agenda contains information on market potential, clients and their attitudes and behaviour, distribution channels, communication and marketing service, new products, etc. (See Appendix 1).

The next step is to gather and process information and to choose the media and the form of presentation. Instead of indicating potential sources and agendas of information, we will below briefly outline some general requirements that information often has to meet when it is to make the connection or adjustment from the sender to the recipient in the optimum way.

6.1. Communication problems in the adaptation phase

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A central problem of a communication system is the fact that information changes in content while it passes through the system, i.e., the recipient gets something different from what was sent. Shannon and Weaver (1949)

distinguish between three different problem levels that are encountered in the communication process and that lead to information distortion.

1. How exactly the symbols received correspond to those disseminated (the technical problem).
2. To which extent the meaning constructed on the basis of the symbols that the recipient receives corresponds to the meaning assigned by the sender to the symbols that he transmitted (the interpretation problem).
3. To which extent the action of the recipient on the basis of his interpretation of the meaning content is consistent with what the sender expected (the effectiveness problem).

The technical problems include the physical structure and the flows of the communication system, e.g. the man-machine combination, the components through which the message must pass, the time estimate for the information flows to pass through the system, the physical form that the message has when it passes through the system, etc. We will not go further into the technical problems, but will briefly survey some interpretation and effectiveness requirements applying to information and information dissemination.

6.2. Information characteristics and information quality

Information litterature contains a number of characteristics or dimensions that are commonly used when information or information quality is to be assessed. Grabner and Rosenberg (1969) distinguish between two classes of 30
semantic noise in a communication channel. The general classes are called omission and distortion. An omission takes place when a complete message is transmitted, but not received, or when the symbols are technically received, but their meaning is ignored.

A distortion takes place when the message is received, but the content of the signals changes between the sender and the recipient. If the recipient assigns a different meaning to the content of the message than what the sender meant, distortion can be said to have taken place in this case also. Both conditions contribute to a reduction of information quality. When we indicate below some information characteristics which can be used to evaluate information quality, it should be understood that information characteristics will vary depending on which target groups the information is destined for or which purposes the information is to serve. For instance, the requirements of accuracy, frequency and time perspective are different depending on whether the information is destined for the operational or the strategic level of a company.

Our first section on information quality deals with the dilemma between structure and flexibility - between no information and the problem of too much information. The information volume is understood to be the amount of information available to describe a specific situation or condition, and can be described as appropriate if the decision maker gets the information needed to make a good decision. If an organization tries to collect too much, it will be overwhelmed with information and will be unable to function.

> **"If the information system is so tightly structured that the environmental changes are consistently missed, the organization will be unprepared to face with threats and opportunities to survive".**
>
> **(Weick, 1969).**

Another aspect of information is accuracy or scope. Accuracy is an information characteristic that refers to the information as a true, valid and precise representation of facts for sound decision making. All decision makers do not require an equally high degree of accuracy, accumulation or scope of information. The properties of facts also cause these conditions to vary so that the level of accuracy should be adjusted to both the decision and the information itself.

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An essential requirement in times of ample availability of information is that the information be relevant or decision-related. Since information often possesses an element of surprise or the decision maker does often not know his own needs for information, this requirement can be a real dilemma. This is not to say that a company should not demand or evaluate the information that it needs.

Next comes the time aspect. A common requirement on information is that it be up-to-date and that it arrive at the right time. We can further distinguish between information that describes historical data or information on future conditions (prognosis). Information that arrives before we have use for it may often have as little value as information that comes too late. An essential question in this connection is also how often (frequency) the information should be disseminated.

Information should be simple and easy-to-understand. The format of reports, use of symbols, language, etc. have great significance for how decision makers understand or make use of information. If reports are easy to understand, the time taken to evaluate the information is reduced, which gives the decision maker more time to weigh the decision itself.

Information should also be comparable. This is particularly relevant if several sources are used, conditions in different countries are compared, etc. For instance, some countries will keep statistics on a small number of the variables that we may need. The statistics also may have been collected during different periods of time or contain a variety of things under different definitions. A mechanism for standardizing concepts across nations seems to be a common wish of information processors and decision makers. Work on this is therefore being done in different quarters around the world.

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Even if the different conditions regarding information quality are satisfied, it is of little help if the recipient cannot comply with the information or understands it in an incorrect way. Internal conditions such as structure and individual comprehension determine to a large extent how an organization understands information or knowledge from the environment. Individuals in an organization focus on what they are trained in or on conditions that are relevant to their work situation. For instance, the outcome of a sales drive is a crucial matter to a salesman, while distribution matters are crucial to someone whose specialty or work area is distribution. It is for this reason important that companies have different intelligence units that focus on different aspects of the environment. An organization whose task is information dissemination may have a problem reaching the right people in an organization. Their interests also change over time. The capacity of an organization to learn from its environment depends on factors such as the attentiveness, self-interest, uncertainty, roles and social norms of the different individuals (March and Olsen, 1976).

6.3. Conclusion

This assignment started with an explorative study of information, communication and dissemination of knowledge in a distribution channel. We discussed various approaches and concepts applying to market information systems. We used a system perspective as a general superstructure, explaining how structures and processes connect and how they can be constructed in and around information flows at different levels of analysis (internally in a company or between companies). We also developed a simple model to construct and analyze an information system. In the model we distinguish between different decision-making areas in a company and different levels in and between companies at which decisions are made. This

is further used to map the needs, goals and effectiveness of information dissemination between the sender and the recipient. We will encounter a number of problems when dealing with the adaptation of the system in the best possible way. We therefore also discussed some general information characteristics and their significance to reduce uncertainty and to increase the value of information in decision-making contexts. In the last part of the assignment, we will use our model in a case study of a project for the dissemination of market information and technical advice on fish and fish products in Asia and the Pacific region (INFOFISH).

PART 2:
DEL 2:

INFOFISH

7. INTRODUCTION: INFORMATION DISSEMINATION IN SOUTH-EAST ASIA 34

The objectives and funds to develop fishing and the fishing industry in developing countries has been a well-debated topic in foreign aid circles. For instance, we have had in our country a number of heated debates on the consequences of the Norway-financed Kerala project in India. Claims that fish resources are being exhausted due to high technology, that income distribution is distorted so that the poor become poorer and the rich richer have been central topics of the debate. The belief that high technology and capital can solve the problems of developing countries has been typical of this and many projects. Another objection has been that knowhow was based on foreign expertise which often left the project after the expiry of the project period without transmitting its knowhow to those that would be maintaining the project and keeping it going.

One of the intended objectives of the project that I will describe in this assignment was to remedy the gap of information and knowhow that exists between poor and rich countries regarding market information and technical advice for fish and fish products. People who have worked with the fishing industries of most countries know that knowledge of markets and market information gives great clout or promotes development. Those who do not know the needs of consumers, the market potential, prices and product characteristics, quality standards, etc. are often short-changed in competition contexts. On the other side, we have the regulating authorities who wish to make better use of the available resources, have a greater protein supply for their own populations and a stable export income. With these experiences in mind and with concrete experiences from a corresponding project in Latin America, it was proposed in a meeting in Rome (November 1977) that a project be establised for the dissemination of market information and advice on fish products in Asia and the Pacific region. The project that was called Infofish had a planning period of nearly 4 years and was officially launched in Kuala Lumpur, Malaysia, in October 1981. 35

We will start by describing which decision-making areas, tasks, and target groups the project was called upon to handle. For the most part, we used working plans and schedules from the time before the project was carried into effect as source material. The question that was asked in the beginning was which information needs were prominent. We have already answered that question by stressing that the project will deal with information related to market-oriented decisions. The identification of the more specific tasks and target groups of the project is the next step of the report: who are the main recipients, what are their needs for information, and what effect do we wish to achieve?

We will also describe how the Infofish system was developed and organized to accomodate the goals that were established. We will describe the information (message) developed, the media used, and the information characteristics emphasized. We will also discuss the results achieved and the feedback collected to evaluate and rectify the project work.

This work is based on a 9-week stay at the headquarters of the project in Kuala Lumpur during the summer of 1983. We used various written sources (plans, status reports, reports of consultants, correspondence and a number of internal and external project publications), and we also interviewed the project staff. In addition, I visited the district offices of Manila, Hong Kong, Singapore and Bangkok, where we interviewed the local staff. Among the users, we talked to some importers in Hong Kong and Singapore.

7.1. Infofish: from idea to reality 36

The situation regarding the fishing industries of most developing countries of Asia and the Pacific region can generally be characterized by

- low level of processing
- traditional processing and storage methods

- sales mainly to local markets due to a poorly developed distribution system and equipment
- insufficient knowledge of modern processing methods, distribution methods, and marketing

Knowhow and information is needed to develop a viable industry capable of processing and distributing quality products both to the local markets and to export markets. Producers, exporters and importers lack reliable information on marketing opportunities, consumer preferences, prices, suppliers, trade regulations, processing technology, etc. It was this information void that the different delegates discussed at the first planning meeting held in Rome, in the fall of 1977. A number of proposals were made at this meeting indicating which tasks should be of central importance.

It was pointed out that the project should first and foremost concentrate on the external trade, i.e., exporters and importers within and between regions. To limit the scope of the project, it was proposed that the development of domestic marketing systems be carried out through regional projects with and without assistance from the main project. The regional projects should for instance ascertain that the different countries were secured a regional supply of fish resources.

It was further proposed that the project help identify new product possibilities for both domestic and export markets. The project would not have the staff or the equipment to undertake technological research and product development. It will, on the other hand, help establish contacts with national and regional institutions that work in this field. All fish products of interest to the participating countries should be included in its work, but it should naturally mostly concentrate on the most essential fish species or product varieties. Also, the project should not only distribute topical market information, but also describe market trends and carry out simple prognostication or trend forecasting.

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The importance of advice and the training function were central topics at the meeting. Matters should be handled in such a way that the project in question would on the long run become self-managing. It was thought that three years would be a suitable project period. Only a handful of nations took part in this meeting. It was proposed, however, that the project be made known to all countries in the region with an invitation to participate.

This meeting was followed by different planning work to map the different needs for services in the actual areas. Central institutions in the different countries were visited and the different tasks and project objectives were discussed. The Norwegian government was approached for the financing of the the project, which was entitled INFOFISH (Marketing and Advisory Services for Fish Products in the Asian/Pacific Region), and the financing was granted in April 1980. The FAO (Food and Agriculture Organization) was given the responsibility for recruiting, international travel, salaries and other project tasks.

The main goal of the project is to secure a balanced trade of fish products in the participating countries and to make the most of the export potential within and outside the region. More specifically, the main objectives were outlined in the introductory phase as:

a) to produce information on the marketing opportunities and supply of fish products within and outside Asia and the Pacific region 38

b) to make recommendations on product specifications, processing methods and quality standards in accordance with market demands

c) to help develop new marketing opportunities for fish resources that have traditionally not been used as human food

d) to act as an advisor in the planning and implementation of national information and research activities in the participating countries

e) to train the national staff of government departments, institutions and the industry in market development, and at the same time to attempt to strengthen the national institutions in this field

f) the final goal is to establish an organizational framework to maintain these services on a permanent and self-financing basis after the first and externally-financed part of the project period is over.

Over the course of the latter half of 1980, the staff members and consultants of the FAO travelled to the potential member countries to explain the objectives and services of the project, to give advice on the establishment and the functions of regional district offices (National Liaison Offices) and to map the information needs of the central powers and the industry.

The technical preparations were carried out in the FAO headquarters in Rome where the first list of producers/exporters of fish products in Asia and the Pacific region and importers around the whole world was compiled. A draft catalogue of existing and potential fish products was prepared at the same 39
time that a design of a technical information and documentation centre was drafted.

In February 1981, the project was ready to be implemented. After premises and a local staff were received from the authorities of Malaysia, the project leader and the market experts got down to work in the project head office in Kuala Lumpur in the summer of 1981. The official opening took place on 7 October 1981.

Based on the objectives of the project, a 4-year plan was developed. The costs were estimated as about US $2 million. The following is the working plan in six main points:

1. Establishment of a regional network

The services of the project will be provided through a regional information and advisory network consisting of the project headquarters i Kuala Lumpur and regional offices in the participating countries. The latter offices will function as a link between the industry and the main office.

The work to establish a management committee (Advisory and Coordinating Committee) to examine the project tasks and to advice on future tasks was an early priority. This committee will also have the task of working to self-finance and continue the project after the first part of the project period is over.

2. Establishment of market information services

The main goal will be to gather/process and disseminate relevant market information to members. In addition to data from the regional district offices, it was also proposed that a structured and continuous contact be established with a number of government and private institutions all over the world. Distribution would take place via media such as

- telex
- telephone
- personal contact
- price/market report every 14th day
- journal (every other month)
- technical and other reports

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This material will be available to all, but with special rights and payment conditions for members.

UNEDITED TRANSLATION
for information only
TRADUCTION NON REVISEE
Information seulement

3. Establishment of trade promotion services

One task will be to put the producers and exporters of member countries in contact with potential buyers within or outside Asia and the Pacific region. In the same way, the project headquarters will mediate contact from importers to the producers or exporters of the member countries. It was proposed that a directory of producers, exporters and importers be set up as well as a product catalogue with a detailed description of the fish products. Among special activities, it was emphatically wished that special focus be given to the utilization of previously-useless resources.

4. Technical advice

The project considered that it was important to help the authorities and the industries of the participating countries to make the most of the information that might emerge. Such assistance will cover all aspects of fish handling, processing, packing, labelling, quality control, distribution, and shipping. A centre for technical information would be established. New technical information would be distributed to members via different media and by means of visits by the project staff to the industry and institutions of member countries. As the staff would not have sufficient resources in different areas to answer all inquiries, it will be important to have a close and active contact with institutions and individuals who can assist with services in this field. The project will be able assist in the planning and 41
development of the fishing industries of the member countries.

5. Establishment of training programs

It is desirable to train staff in the participating countries to operate a market information and service system for fish and fish products. In this way, it is possible to ascertain that a sufficient number of people in each

country can after a time continue to provide the services without assistance. The project should give the staffs of the district offices special training at the project head office. Brief training courses on specific aspects of market development and export drives of fish products should also be arranged. Funds should be set aside for study trips for staff in the member countries to initiate or follow up specific export opportunities.

6. Establishment of collaboration with other projects and organizations

Collaboration with other projects and organizations that operate in the region and that have an interest in the development of fisheries in general, and in the marketing of fish in particular, should be an obvious matter for a project like Infofish. A close collaboration with a sister project in Latin America, Infopesca, should be highly useful in the establishment phase. Two project staff members were recruited from this project so that Infofish benefited directly from the experience gained in Latin America.

It became evident during the initial phase that the main decision-making areas needing assistance from the project could be defined within the sectors of market information and technical advice related to product and market development. The main target groups were first and foremost the fishing industries and government authorities in Asia and the Pacific region. All had an equal right to membership on the condition that the member country established a regional office. The general planning documents did not specify clearly what the various, more concrete target groups were and at what level in companies or organizations they were. This became somewhat clearer when the organization of the project proceeded and different departments took form. 42

The different tasks of the system were discussed in different instances during the planning period. However, it seems that it was known at a fairly

phase how to proceed. We would claim that the reasons for this are a general understanding gained from earlier work with the fishing industry, a thorough and long planning period, and a simple analysis of needs in the potential member countries. The development of this project may bear out the assumption that users often have to be explained what relevant information is and that users do not know their information needs. The needs seem to have grown with a taste of market information.

The general objectives of the project can be summarized as follows

a) to establish a mutual market information centre or forum for member countries where data can be collected, evaluated and distributed in an effective and equitable way

b) to provide technical advice to members

c) and to help develop a modern and effective fishing industry for the production of quality products

We will now move on to describe how the project was organized and adapted to meet the general objectives. The component goals of the various tasks will also be examined so that the goals can then be more easily compared with the results.

8. ORGANIZING: STRUCTURE AND FUNCTIONS 43

Since the establishment of the project in 1981, an organizational structure has been gradually worked out that seems to be appropriate for the objectives set in the establishment phase. The executive units consist of the head office in Kuala Lumpur and a district office in each of the 18 member

countries. The project is managed via a management committee (Advisory and Coordinating Committee) appointed by the member countries (6 people) and the FAO. The management committee was appointed in a meeting in Kuala Lumpur (May 1982) to which representatives were invited from all district offices, and where 9 delegates met. The intention is that this meeting with the district offices (Technical Consultation of Infofish National Liaison Offices) be held every other year. The programs and activities of Infofish were examined in this meeting by both the head office and the district offices. Future work in broad outline was discussed and the management committee appointed. From the project's side, it was hoped that the management committee would meet with the project management twice a year to advice the project with feedback from different user groups. It may be difficult to comply with this because of financial reasons. The area to be covered is big, and travel and meeting expences are correspondingly high.

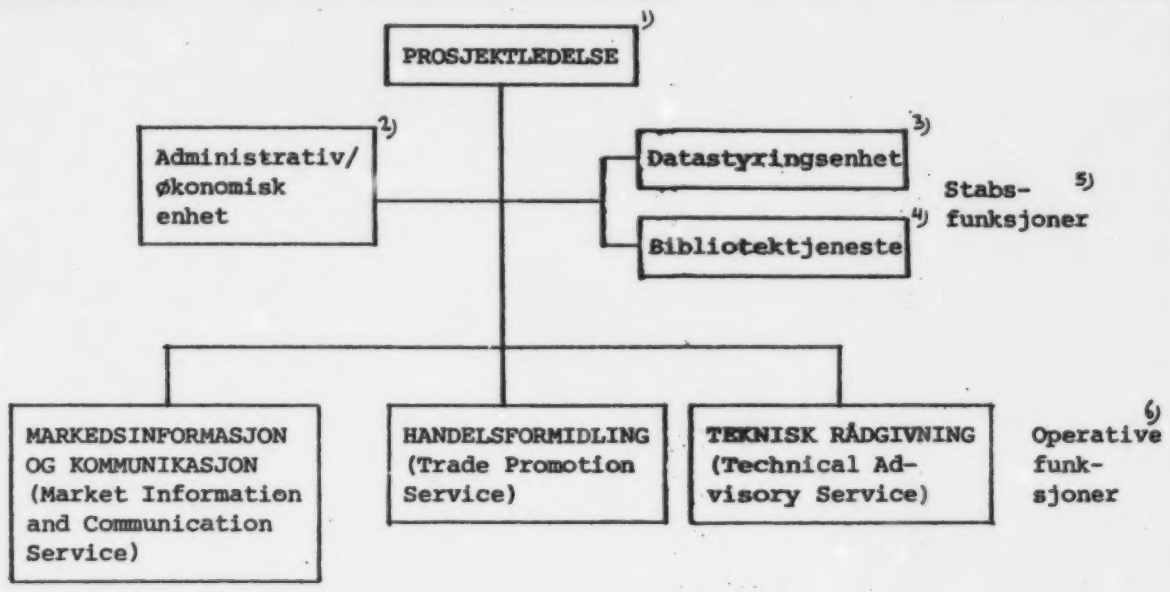
Before we move on to describe and discuss the different operational activities of the project, we will briefly turn our attention to the main office of the project.

8.1. Head office - management and staff

Infofish is organized around three functional units: the Market Information Unit, the Trade Promotion Unit and the Technical Advisory Unit. Some of the functions of these units are overlapping. I have chosen to separate them into theirown staff functions or programs. This applies first and foremost to 44
the data base and the data management unit. We also think that the head office library and the administrative staff serve as joint functions. The figure below shows the organizational chart of the head office.

Figure 6. The organization of the head office of Infofish.

Key: 1) PROJECT MANAGEMENT 2) Administration/finance unit 3) Data management unit 4) Library services 5) Staff functions 6) Operational functions



Figur 6. Organisering av Infofish's hovedkontor.

The project leader has the main responsibility for all the activities of the project and he must ascertain that all the different goals are carried into effect. His job is to manage and coordinate the work of the other experts and the project staff. He also sees to it that meetings are held with the managing organs (the FAO and the Coordinating and Advisory Committee). He has a junior expert and two special secretaries to assist him in this job.

The administrative staff consists of an assistant, receptionist and chauffeur. They and the secretaries of the functional units are all local manpower.

Data processing is an essential function of the project. It had first been divided among the different departments, with for instance the Department for Trade Promotion being responsible for the data base itself. With the switch from a somewhat awkward EDP system (NBI-3000, Word Processing System) to a more flexible on-line system, the responsibility for the date base was transferred to a separate staff function. We will therefore start by giving a brief description of the data base of Infofish. A separate Appendix will include a somewhat more detailed report. (Appendix 2). 45

Data base management unit

The Infofish data base today constitutes a directory of:

- fish products that are produced in the region
- producers and exporters of these fish products in the member countries of Infofish
- importers of fish products all over the world

The data base was established to facilitate the registration of trade partners and products in the region. It has programs to list these variables and to write standard letters to those who might participate in the trade mediation. The work of the data base has up to now been labor-intensive and awkward. The new system will facilitate the work and offer possibilities for more flexible and extensive use. It would on the long run be desirable to have an on-line connection to external units such as the different district offices. Such a solution would for instance ensure a faster transmission or collection of data and information. A subject file has been developed specifically with technical advice and guidance in mind (cf. Ch. 3.4).

Library service

The library service first functioned under the Department for Technical Advice. Since the library is of central assistance to all the departments of the project, we found it appropriate to set it apart as a separate staff service. Two people are directly involved with this work that consists of normal library functions: recording and classifying incoming publications and journals, and helping to procure and distribute relevant information to internal or external users. Information covered by the library service can be divided into three groups:

a) General publications (books, reports, articles, etc.)
b) Journals and periodicals
c) Price/market reports and references

The general publications amount today to almost 12 000 items of books, research papers, studies, articles, catalogues, bibliographies. They are classified according to subject in agreement with the filing system of the data base. Some examples (see Appendix 2):

- processing and refining
- quality control
- equipment
- market information
- fish farming and aquaculture

These can be cross-checked against the country and product files.

Over 20 periodicals from the whole world can be found in the library. Most of them are published once a month. Because of journals, the project staff can follow what is happening in the actual areas within or outside the project area at all times. They can also act as gleaning sources for the general publications.

While we were visiting the project, 30 price and market reports were gleaned and processed. They contain price and market information on fish and fish products from the whole world. The information serves as background information for work such as the Trade News. The special contacts that the project consults in the preparation of the Trade News are not these sources. These reports can, on the other hand, be regarded as analogous to price and market reports from other institutions or projects from the whole world. 47

In addition to subject files, the library has also divided its information and data into product files and country files. Please see Appendix 2 for an overview of these files.

8.2. Project costs and financing

According to the accounts of the project, the total annual costs (1982/83) are about US $700 000 including service costs. The breakdown of the costs into different components is as follows:

Project manager (1)	12%
Market experts (3)	31%
Consultants (1)	11%
Junior experts (4)	-
Administration and adm. assistance	6%
Total personnel costs	60%
Indirects costs	28%
Project service costs	12%
Total costs	100%

Personnel costs include social costs. The figures in brackets indicate the number of man-years. The three different departments, Market Information, Trade Promotion and Technical Advice cost approximately the same.
The project uses a lot of consulting help in its work. This cost component was greater in the initial phase of the project and is expected to stabilize as 1 man-year in 1983. 48

The project involves 4 junior experts (economy, communications, international trade and technology), who are financed outside the project (countries such as Norway, Sweden and the Netherlands). All these positions have not been filled for various reasons. At the time that we visited the project, only two of these positions were filled.

The administration and administrative assistance consists of 15-16 people to perform duties such as secretarial work, telex, writing, etc. Most of this work is financed by the Malaysian Fisheries Department (MAJUIKAN).

The indirect costs consist of

- service trips	: 7%
- contract services (such as printing costs)	: 7%
- general costs	: 6%
- material/equipment	: 3%
- training	: 5%
Total indirect costs in % of total costs	: 28%

It is emphasized from the project side that it is hardly possible to reduce costs from what they are today without a negative effect on the service functions that the project is to carry out. The different activities are also so heavily integrated that a reduction in one area will also affect the others. One problem seems to be the lack of flexibility to change activities within the budgetary framework. The result is that funds cannot be transferred between activities once the budget has been established. Should for instance the technical service needs be costlier in a period than expected, and funds could be transferred for instance from Trade Promotion, this is hard to do without circumventing the system. However, INFOFISH has achieved a greater flexibility to change its activities and tasks in midstream because its earning capacity is greater than expected. It has in this way achieved the slack that it needs to increase its freedom of action in an otherwise closed system.

49

As was mentioned above, the project is financed by Norway for a total of US $2 million over the first three-year period. The remaining 11-12% will be financed by MOUIKAN (Malaysia). It now appears that the Norwegian authorities are willing to finance parts of the project for an additional period of 3 years for a sum totalling US $480 000. It is estimated that the project will be self-financing from 1987 on, but that continuing support from the member countries should possibly be counted on. The project is calculated to earn a total of US $794 000 with the sale of publications and services during the period of 1984-1986 (3 years). The remaining costs of this period (US $880 000) are assumed to be covered by the member countries.

The greatest chance to reduce costs is to hire local experts who usually cost one half of what international FAO experts cost. We therefore believe that it is important for the project to invest in the future in local expertise and in the training of same, and in so doing make these countries more self-sufficient as well. To preserve a neutral image with respect to the member countries, we believe that it is advantageous to have the project manager from a country outside the project region. One puzzle is how the tasks will change in the future when the purpose is to earn money through the tasks. Will the target groups and activities change? Will it be the most resourceful who will benefit from the project? Will the staff use a lot of time and resources to earn money (marketing of itself and its services) and not to help the developing industrial sectors?

9. DEPARTMENTS AND PROGRAMS: GOALS, MEANS AND RESULTS 50

In the first part of this report, we discussed various factors that should be considered when we are to evaluate organizations (Cf. e.g. Thompson, 1967). We examined how needs, goals, subgoals, means and effectiveness go together and how they can be evaluated on the basis of the organization itself

(goals of the organization - efficiency - internal standards) or on the basis of different groups outside the organization (goals for the organization - effectiveness - external standards).

Our descriptions and evaluations essentially deal with the measurement of internal goals and effectiveness. Because the value of information is difficult to measure and because the project is not yet based on economic criteria, we cannot regard this as any complete evaluation but more as an indication of drive. An evaluation of the external effectiveness of the project must be based on for instance interviews or a survey among the potential target groups of the project. This is beyond the timeframe and financial resources allotted to us in this assignment. However, we received some impressions from the user side by interviewing a handful of importers and exporters in Singapore and Hong Kong.

9.1. Department of Market Information

The Department of Market Information concentrates on the long-range goals (strategic level) of the industry. This mainly consist of developing a market-oriented conduct in the industry and of providing information on product development, market development and marketing methods.

This part of the project is managed by a communications and publications expert. He is responsible for a number of the joint functions to do with market information, be it functions on the data base side or the teaching and training of staff within this field. Most of the work, however, deals with 51
the two main areas of responsibility of the department, i.e., the processing and publication of

- Infofish Marketing Digest
- special reports and publications including the distribution of FAO publications

INFOFISH Marketing Digest

The Digest is the main journal of the project and it is published every other month. Suggested target groups are exporters, importers, government authorities, and individuals in the processing and equipment industries. The idea to publish such a magazine and to distribute it all over the world is two-fold. Firstly, the journal is used to publish articles of potential or real value to the different target groups of the project area. Through the two other departments of the project, the editor and his staff get feedback and suggestions on topics that the industry or distribution companies in Asia or the Pacific region wish to have more information on. It is emphasized from the project side that a number of technical publications and other material published by international and national institutions have previously had trouble reaching the industry. This applies to the small companies in particular. Infofish in cooperation with the Technical Department is working to correct this inequality. The magazine will also be used to inform the fishing industries of the world about the industry and products of the project region.

The other purpose is to turn the journal into a future source of revenue for the project. The journal has so far been distributed free to its subscribers and members. The intention is to reverse this by charging a subscription fee for the paper. Advertising has been tried in the last few issues. This work is expected to be intensified to produce revenue. Such a policy will also help clarify if the journal is wanted or read by the different target groups. 52

The goal of the editorial staff is to publish quality articles of medium length. In addition to writing or editing some material themselves, the staff of Infofish get experts in certain fields to write articles on topical matters. This is done for instance so that the staff writes to potential writers of articles with suggestions on topics or fields that generally seem to be of interest to readers. Preferred topics seem to be

- market and product descriptions
- descriptions of fish and fish processing in different member countries
- investment and financing of fisheries in member countries
- processing and handling methods
- fish resources and resource overviews
- product improvement, product research and development
- equipment in the processing industry
- import regulations
- fish and fish processing statistics
- transportation
- quality control

Most of the fields taken up have a long-range or strategic perspective. One goal is to gradually involve the different regional offices in the editing and publishing work. As we will discuss later, a number of these articles are reprinted or quoted by regional and national journals in a number of countries. The project has also taken the initiative to prepare or edit a number of special reports. They are also reprinted in the Digest.

Results

After the first journal was published in October 1981, a total of 11 issues have been published (incl. 1983) featuring a total of more than 100 articles. External consulting help with expertise in media and communications has been used to assist the editor in this work. 53

The journal is the only one of its kind in the world, focusing as it does only on market and distribution problems in fish processing and having the whole world as the target group. The reception of the journal by readers can be best explained on the basis of the results of a reader survey conducted after 5 issues had been published. It turned out that the journal was

consistently thought to be satisfactory and it was thought to contribute information that was hard to find elsewhere. The same opinion is seemingly expressed in the correspondence that the project has been exchanging with users. A great deal of the material is reprinted and translated in local journals, mostly in the member countries of the project but also all over the world.

The finances of fish processing, and new markets and products were especially pointed out as the weak aspects of the content proper (poorly covered). A sample issue was distributed to the following target groups. Figures on the right indicate the current recipients of the journal (see Appendix 3).

Category/target group	Sample issue		Current subscribers	
Exporters/producers				
Asia and the Pacific region		680		1240
Other areas				470
Importers				
Asia and the Pacific region	720		310	
Europe	1160		270	
North America	520		}	
Latin America	300		}250	
Africa and Middle East	200		60	
		2900		890
Government institutions		}		470
Research institutes		} 200		330
Equipment manufacturers		}		530
Consultants		} 450		200
Organizations and associations				270
Press		100		90
Other		770		500
Total		5000		5090

Even if the sample issue was sent to more or less random addresses or target groups, the paper has gradually found its readers. The main group consists of exporters and producers in the project region. Importers are spread in fairly even numbers across Asia, Europe and America. Government intitutions have gradually grown to a considerable group of readers. Deliberate attention to technical service and advertising possibilities in the paper have had the effect that manufacturers of equipment are seen as a central target group. To assure that the paper reaches the recipients and that it is wanted, the journal is sent only to those who reply to an attached address card one a year. 54

A reader survey showed that a number of companies operate overlapping businesses so that 33% of the respondents of the survey could be characterized as production or processing enterprises. Despite this, it seems that the target groups are very much oriented toward export and import operations and not toward general production and domestic distribution. The same survey showed that the size of companies reading the journal varied. The table below gives a general idea of this. The conclusion to be drawn from these figures is that it is to a large extent the small companies that use the service.

Size of turnover (US $ mill.)	%
Less than 5 mill.	58
5-20 mill.	23
20-50 mill.	13
over 50 mill.	6
	100

The same study showed that each journal was read by about 4 people in each company and that 90% of these could be characterized as middle or top managers. This would suggest that about 16 000 people read or see this journal. The question of how long a reader used on each journal was 55

answered that more than 80% used more than 30 min. or read more than three articles per issue. We thought that this was an encouraging figure. An essential reason for this may be that the editorial staff pays deliberate attention to making the material clear and easy-to-understand, and that the lay-out is professionally done. The users that we interviewed seemed to confirn the results obtained in the reader survey. All knew the journal and its contents well and thought that the articles were interesting and topical.

The Infofish Marketing Digest is the only journal that has world-wide distribution and is produced in Malaysia. There have therefore been some unavoidable starting problems because the mailing is not done by air. It can consequently take a relatively long time for the journal to reach the consumers. A survey showed that it generally took 1 1/2 weeks for the journal to arrive, but that 37% received it within 1 week. The main reason for this is that Malaysia has no special arrangements for the distribution of journals as is the case in most other countries. The cost of sending a journal by air is therefore disproportionately high. The air freight to the USA is for instance kr. 23 per journal against kr. 1.50 by boat. Those who so desire can have the journal airmailed by paying US $20-25 per year. The total distribution costs are about kr. 12,000 per issue or easily one half of the printing costs.

Other publications

The project has published 9 Infofish reports of which one is in printing. Some of these were produced by Infofish alone, while others were produced in collaboration with consultants or other organizations. A "Register for the Import Regulations for Fish and Fish Products" was updated in collaboration with the FAO headquarters. Among other studies can be mentioned

- transportations studies (frozen fish by air)
- market studies (e.g. Japan)
- how to set up a quality laboratory

In addition, the project has taken the initiative to prepare a total of 7 special studies financed by the Asian Development Bank and the FAO. These reports are based on consulting work or on previous unpublished manuscripts that are revised or edited for general publication. They deal with market and product studies on tuna, shrimps, cuttlefish, fishmeal, seaweed, stockfish and valuable fish. 56

These publications are marketed and issued as a part of the data package of Infofish. A short summary of these studies is published in article format in the Digest. It has been pointed out by several quarters that a number of publications that can be of great value to the industry are not known or do not reach the users. To remedy this situation, Infofish has started to send out lists and distribute a number of FAO publications (especially technical reports and work reports) within its distribution program. This turned out to have a great impact and several orders have been received.

Plans to develop a small paper (fact sheet) of 1-2 pages on special matters has been put on hold due to reasons of manpower. The intention was that this paper would be attached to for instance Trade News and that it would contain facts such as financial data on production matters.

A complete list of Infofish reports and special studies is found in Appendix 4.

9.2. Department of Trade Promotion

The Department of Trade Promotion was established to further trade transactions between members. It could perhaps be said that it acts as a broker between the buyer and the seller (often exporters and importers) of fish and fish products. In addition to the broker role, the department also

publishes a price and market report every 14 days (Infofish Trade News). 57
Essential in this work is the project data base and directory of companies that the department has developed. The reader will find a description of the data base in Appendix 2.

Trade promotion

Infofish receives continuous inquiries about the supply or demand of fish products by telex, telephone, or letter. With the help of the data base, an attempt is made to put the parties in contact with one another. It can be said as a general rule that each inquiry is returned with 6-10 different trade contacts, depending on the product and available information. Searching is done partially manually through the data base so that it can be influenced to a certain extent which contacts are put in touch with one another. Companies on which the data base has the best information are used most often and there is maybe also a tendency to use companies that are known or that have been used previously. Whether this is a weakness is open to discussion.

Inquiries by telex are answered within 24 hours. If an inquiry comes by mail, the limit within which it must be answered has been set as 5 days. The department also tries to follow up on the outcome of transactions by asking for copies of further correspondence between the parties. It can in this way check whether the contact led to a concrete result and which companies are active or interested in this work. A response of 40% has been achieved to date, i.e., if 8 firms get a letter or a telex, 3 of them generally respond with copies to Infofish.

Infofish Trade News 58

Trade News comes out every two weeks and contains information on prices, trends and comments on different products on different markets. The target group is here as elsewhere the fishing industry of the target area as well as global importers or institutions that actively contribute to this form of information exchange.

Products are grouped in nine main categories (e.g. fresh and frozen shrimps, dried, salted and smoked fish products) according to the method of processing and type of fish. These are broken down into the different main markets. Any further product specification depends on what information is available. The prices are noted as cif, c&f, wholesale or whatever is usual for the specific product/market. The same applies to the weight and packaging. Price and market data are supplemented with comments, market trends and statistics relating to special conditions. An attempt is also made to disseminate other information relevant to the distributors.

Data and information is gathered from a number of different sources. Several district offices regularly supply data. In addition, price reports and periodicals are perused, but most of the information is gathered from a network of about 40 correspondents (80% private companies) which are often exporters or importers over the entire world. The usual procedure is that these correspondents transmit twice a month special price/market information under an agreement with Infofish. This takes place most often by telex in a coded form, but in some instances also by letter. For a remuneration for these services, these market correspondents receive all Infofish publications, and on request, advice and assistance in technical matters. It should be emphasized that a close collaboration with these correspondents is of great importance for the quality of the information that Trade News contributes. The manager of Trade Promotion, J. Hannes Nierentz, stressed that the different companies show great goodwill and openness in supplying price and market information. 59

Results

One of the first activities of Infofish was to inform approximately 3000 importers (over the whole world) and 1200 exporters (in member countries) about the functions and goals of the project. They were asked to fill a registration form, indicate their product interests, product lines, capacity, etc. (Appendix 2). To date, forms from about 1040 companies divided into 570 exporters and 470 importers have been received and registered (Appendix 5). Infofish generally receives about 2 inquiries per day. The project has mediated about 1100 contracts in all. It has turned out that there is a good agreement between the supply and demand of the different products and extensive trade is taking place within the region.

As was expected, the use of this service varies among the different countries, a fact that is partially related to the size and importance of the fishing industry in these countries. It can be noted, however, that some countries (Bangladesh, India, Malaysia, Pakistan, Singapore and Sri Lanka) generate a greater share of inquiries than the number of companies in these countries would warrant. Countries such as Hong Kong, Malaysia and Singapore use the project to a large extent to find product suppliers. It can be seen that the project is also contributing to the promotion of trade within the region when it is considered that about 50% of inquiries about product demand come from the member countries (Appendix 5a). Two thirds of the inquiries are about frozen products, followed by dried and salted fish (Appendix 5b). Shrimps are the most popular commodity that the project promotes (Appendix 5c).

It is difficult to estimate the volume or value of fish products that the project has promoted. While it is possible chart the first transaction between companies, it is clear that once a connection is established, chances are great that the contact is continued.

UNEDITED TRANSLATION
For information only
TRADUCTION NON REVISEE
Information seulement

It must therefore be assumed that the usefulness of the Department for Trade Promotion will decrease when the communication and transaction network grows. The contribution of the project toward trade promotion between companies in and outside the member countries can be seen just by counting the number of inquiries that the project has received and mediated. 60

Our interviews with the project management confirmed that the number of inquiries first increased very rapidly to show a falling tendency when the communication network developed. It is not thought, however, that this part of the project will over the years become superfluous because new producers/markets and groups of products are continuously emerging. On the other hand, there are strong indications that a greater emphasis will be placed on descriptions of the current market situation in the future.

The project has also collected descriptions of more than 400 different products in the region. They will be systematized, described and published in the form of a separate product catalogue. The catalogue will contain, for instance, pictures of products, which countries they come from, types of packaging, which species of fish they are produced from, etc.

Each issue of Trade News is sent to about 500 subscribers. Each issue has 26-28 pages and costs US $245 per company in the member countries and US $295 for those outside. In addition, the report is sent to 300 other recipients so that the total edition is 800 copies.

A reader or user survey was carried out in the case of Trade News as well. About 600 questionnaires were sent out and the response rate was about 32%. The dominant impression is that readers are satisfied with the medium, which is also confirmed by the fact that the paper is gradually assuming the function of a guide in price setting when purchases and sales are concluded. In terms of target groups, most turned out to be exporters (65%), while many

also carry on production and processing (47%). About 85% of the distribution takes place within Asia and the Pacific region with India as the biggest buyer (20%). The distribution takes an average of 8 1/2 days even by air. The fact that the longest delivery time was 30 days is just a small indication of the distribution system and its vagaries in the region. The major importers whom we interviewed also confirmed that Trade News data was out-of-date in some areas when they received it. All these companies had their own information systems that gathered continuous price and market information in their actual trading areas. Smaller enterprises and enterprises with more infrequent transactions consider Trade News a source of valuable and useful information. This impression was confirmed during our visit to the Philippines. 61

As to the information content, price information was valued most. News from different countries, comments on product groups and information on competitors was also considered useful, but somewhat less so than price information. The information was mostly used for price comparison purposes, but it was also used to find new markets or product ideas. The survey also showed that the information value varied somewhat depending on the methods of processing and the type of fish. Frozen shrimps were studied most often. To make Trade News data more up-to-date, a system is now being developed that enables users to have price and market information transmitted directly by telex. By paying an extra fee (approximately US $50 per year), users will be able to connect directly into the Infofish data base to receive the information that they might need.

9.3. Department for Technical Advice

The Technical Advisory Service was established to assist the industry with product improvement, quality control, packaging and production technology. For support in this work, the department has a Technical Information Centre

(TIC), where information relevant to producers can be found (see Library Service). The department also has a technical advisor who can assist enterprises by providing direct advice and guidance and by organizing training activities. It is usual to divide the technical advice into three main subjects:

- distribution of technical information at the request of the industry 62
- direct advice and guidance
- organization of training activities for technical problems

A pilot project carried out by the FAO helped the TIC to be available in the project headquarters in good time before the official start of Infofish. Information from files, the library and periodicals is continuously updated by staff in the department and the library service. The information material is categorized into three groups: products, specific topics and countries.

The product file and the country survey follow the same categorization as the general data base of Infofish. The subject file is grouped into subgroups (Appendix 2B) such as quality control, marketing, and the like. Each subgroup is again divided into special topics such as trawling, filleting, forcemeat, packaging equipment, etc.

Infofish has prepared a pool or directory of individual technical specialists and consultants who are capable and willing to help the industry. The pool will be of help in the identification of consultants when the industry might need them.

At the same time, the project has started to collect information on suppliers of equipment for the handling, processing, storage, and distribution of fish products. This also applies to national and regional institutions that carry on research on processing, marketing, product development and quality control.

The department has distributed a questionnaire and material to a number of members to chart the need for technical advice and guidance. It has been consulted about several concrete problem areas that have been solved with the help of photocopies, references and letters. 63

Direct advice

Infofish has little chance to visit companies if they need direct technical guidance because the technical staff is too small to be able to get involved in direct advisory operations. As mentioned above, the project has contact with a number of outside experts who can be brought in for major jobs. One of the goals of the project therefore consists of the identification of the largest possible number of sources for technical information and knowhow with the help of the regional district offices. It has for this reason suggested that all inquiries about technical advice be directed to the district offices. If the district offices do not themselves contribute to the advisory work, they can be expected to suggest national advisors in the specific field. In cases where inquiries about techncial help cannot be solved on the national level, Infofish will assist in getting help from other sources.

Results

What has been said above presents the Department for Technical Advice of Infofish as a something of a broker in technical problems and solutions. By assuming such a role, it can with limited resources bring together the industry and expertise in those fields that are topical at any given the time. In the first year alone, it mediated 300 inquiries in the field. It has to date received and mediated a total of about [illegible] inquiries from the industry in the area. The development of the [illegible]nnical data base is steadily strengthened with information on new producers and sellers of material and production equipment for the industry. This also applies to the directory of

institutions, consultants and technical experts in fish processing and marketing. Special emphasis has been placed on the charting of local resources in the technical field.

A directory of technical consultants and specialists contains about 300 names and there is also a general list of about 1000 producers and dealers of equipment. 64

Articles in the Digest are actively used to answer questions and problems of a general character. It can be proven that the information has led to several concrete results. For instance, during a chance visit to an enterprise, the chief of the technical department discovered a business that had constructed a manual shelling line that was an exact copy of an article in the Digest.

The philosophy of the department is to prompt self-help by looking at the needs and potential of the industry before it gives advice on equipment. It seems to be important that the equipment be so simple that the industry masters it and that service possibilities are satisfactory. Where elementary knowledge is needed, technical equipment is combined with training and courses. Experiences from a course in quality control held in Penang in May 1983 were very good. Several representatives who attended the course are today giving local courses in this field. It might be specified that the entry requirement for this course was that the participants hold corresponding courses in their respective countries.

The work toward the establishment of a structured information exchange of technical information between developing countries in the region has now been established as a central task. The idea is that those who have knowhow in a region are to give it to those who do not have it in a specific field. Help from outside the region will be obtained only in fields where it is strictly necessary.

9.4. The regional network; district offices

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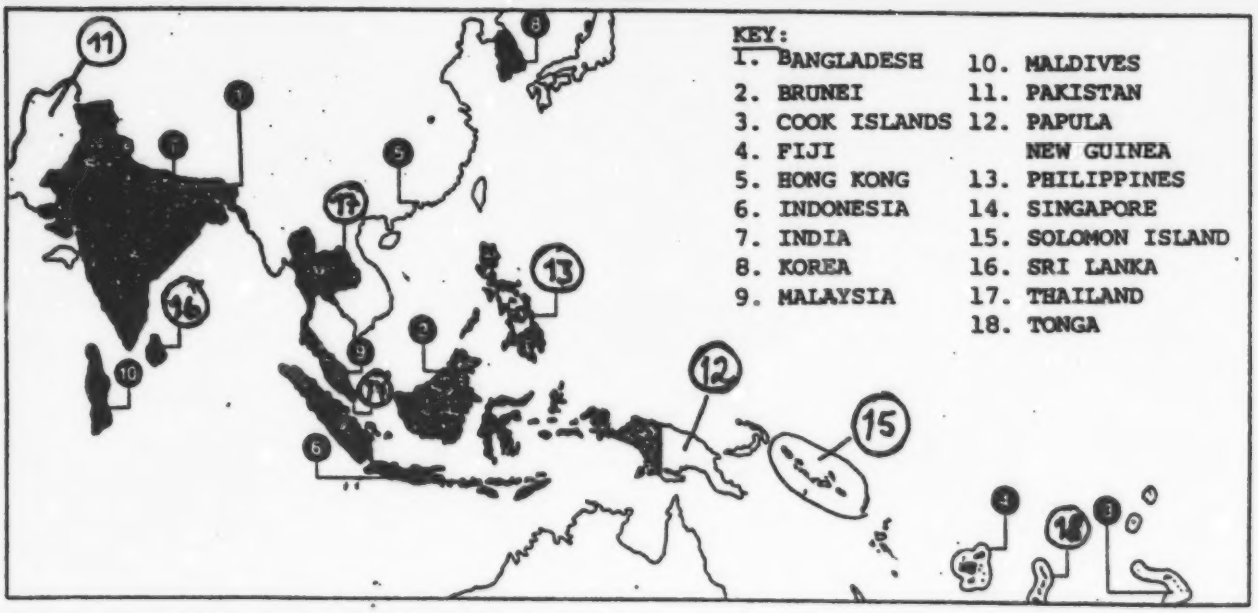
Eighteen countries in Asia and the Pacific region have joined the project by establishing national liaison offices.



It was established during the planning of the project that district offices be set up to function as an integral part of the Infofish project. As membership was free in the establishment phase, the condition was that membership be obtained only by countries that set up a district office under Infofish. The organization and the size of the liaison office varies from country to country. These offices are most often part of the national fisheries or export organs, where it is the job of one or two people to look after the duties of the project full-time or part-time. The offices serve as a connecting link between the project headquarters and the government authorities, organizations and institutions of the different countries.

The first meeting between the different district offices was held in Kuala Lumpur in 1982. It was suggested in terms of goals that Infofish services

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be established on a permanent basis, as a joint organization between the different countries. This could be accomplished if member fees were established and fees for different services collected.

A management group (Advisory and Coordinating Committee, ACC) that would take on the future management and development of the project, was also set up at the same meeting. The committee consists of 6 representatives from the member countries.

The project has set up a program of industry briefings in collaboration with the district offices. The main objective is to explain to the industry and the distributors of the member countries how the project functions and how the industry can best take advantage of these services. To date, 9 member countries have held such meetings and over 900 representatives of the industry, distribution and government authorities have attended. These meetings have not only turned out to be a suitable means to create better understanding of project services, but they have also produced good feedback on the work of the project and generated suggestions for future tasks. The district offices are to perform a number of functions for the three different departments of the project headquarters.

The district offices are expected to give the main office information on their national industry, its development and information needs. The regional offices can be expected to be in a better position than the main office to judge the industry and the needs of the authorities. They also have a better access to data on regional production and market conditions. The main office will be able to ask the district offices for specific information such as addressess of producers/exporters, import regulations or other information for the data base of the project or for general publication.

The second major task will be helping to disseminate information from the headquarters. They can for instance play an active role in the distribution of the Digest or Trade News, or in the dissemination of information on the availability of technical advice. Where language barriers hamper information dissemination, it may be necessary to have the information translated into the local language. 67

Lastly, it is assumed that the district offices in collaboration with the management committee set up goals, strategies, and plans for the long-range and short-range activities of the project. It is hoped that representatives of each district office can meet and function as a senior council of the project. Such a meeting was held, as was previously mentioned, in May 1982 and should in the opinion of the project management be held every other year. This is also a financial problem.

Results

The project depends on an active district network to be able to implement its activities. There are great variations between the different district offices today. The operations of the Korea office are for instance minimal. It turns out that the offices that have been visited by Infofish staff or whose staff has been on a course at the head office function well. Direct contact to initiate communication and collaboration should therefore be greatly emphasized. The collaboration can be later maintained by letter, telephone, or telex. The head office has also established that the activeness of district offices is highly dependent on the individuals involved. Certain emphasis on recruiting and motivation of colleagues could therefore also be a job for the project management.

During our stay, we visited four regional offices of the project to learn about their activities and to learn to which extent they carried out the tasks they were established to carry out on behalf of Infofish. 68

The Manila office (the Philippines) used Infofish files in its information work with fishermen, the industry, and consumers of fish. Several articles from the Marketing Digest of Infofish were reprinted in their own national marketing journal which also gave information on Infofish activities. Data from Trade News was revised for local conditions, possibly supplemented with other data, and sent to the relevant industrial enterprises. They could show us several inquiries from the industry that clearly confirmed that the information was needed and valuable. The office had also established a number of local radio stations (Fish Market News Service) to disseminate market information on fish and fish products. The purpose of the programs was to inform consumers of the daily prices and supply of fish in Manila and 8 other regions. Fishermen and the local industry were the same way informed about the supply, demand, and price conditions of different types of fish and fish products in Manila. Production could in this way be adapted to demand and fish prices stabilized.

The activities of the Manila office showed us two things: Infofish work was useful and valuable, but that it must be adapted to local conditions to achieve its full effect. The latter requires an active and interested office staff that knows local needs and peculiarities.

The Hong Kong office had 70 of the most important companies on its files. About one half of these were users of Infofish, while the rest were registered members only. A survey conducted to test the attitudes of users toward Infofish showed that even if the project was considered useful, it had in several cases not satisfied the expectations that the industry had placed on it. While the intention of Infofish is to implement long-term contracts between buyers and sellers of fish, there are in Hong Kong a number of companies that are only interested in quick transactions with no long-term obligations. They wish to deal with products or clients that yield the greatest profit at any given time. The need for information to maintain a

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transaction system is consequently not pronounced there. Both the industry and the government authorities believe in a free market without government interference and regulation. Before deciding whether the authorities are willing to finance Infofish when the time comes, the office will carry out a cost-benefit analysis on the project. However, there are signs that the authorities will look at is a a matter for the industry to decide whether to continue the project or not. The same idea emerged in discussions that we had with the representatives of the Singapore office. It was pointed out there that if the industry considered the service useful, they would also be willing to pay for the services of the project. In both Hong Kong and Singapore, Infofish was regarded more as a commercial project than a development project, which can be explained against the background of the economic and political situation of these countries. Both countries are big importers of fish and can hardly be characterized as developing countries.

Thailand is one of the biggest fish exporters in the region. The country had earlier major complaints because of the poor quality of export products. Infofish was named as one of the factors that helped the industry get rid of its quality problems, and work was now being actively done everywhere to remedy these problems. Among concrete measures can be mentioned that the authorities have hired an expert on quality problems to travel the country to inform and guide the industry in this field. The feedback that the regional office of Bangkok has received from the fishing industry suggests that the industry values and takes advantage of the services that Infofish offers.

Trade News was actively used in price negotiations with importers of other countries at the same time that it was used to cross-check other price and market information that the industry here used. This office also especially emphasized the role of Infofish as a helpful means in government planning and management of fishing as well as in the production and distribution of fish

and fish products in Thailand. It was obvious that Infofish had here contributed useful information and knowhow to bureaucrats, information that they had earlier not had the resources or knowhow to collect.

The general impressions that we are left with, having visited the four district offices, were that the need for market information and technical advice varied greatly among the different countries, and also among the various groups of businesses of the individual countries. Even if the largest and most resourceful business units praised the work that Infofish performed, they gave the impression that they already had a well-developed market and distribution system. They were most interested in information of a strategic character that the Infofish Marketing Digest and the special reports disseminated.

For the smaller businesses, systematized market information was a new service that several found highly useful. They considered one-month-old market prices topical and useful information. This clearly confirms the hypothesis that the performance level affects information needs and information characteristics. On the basis of these evaluations, we can conclude that Infofish has reached its potential target groups. Whether this will hold true when the industry itself or the authorities of the different countries must finance the project, is open to discussion. In the poorest countries where the need for information is probably greatest, neither the industry nor the authorities are solvent. In the more developed countries of the region, the authorities consider it to be the duty of the industry itself to pay for these services. What remains then is the solvent industry that often has a well-developed market information system. For them to be willing to pay for Infofish services, the project will in all probability have to change its goals and activities to adjust itself more to the needs and requirements of this industry. The question is then whether this is good for the resource-poor sector of the industry in these countries.

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9.5. Training program

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The project plans specify that staffs in the different countries (district offices) be trained to provide the market information services. The intention is that a satisfactory number of people in each country be able to continue this provision of services after the project period is over. Three types of training activities are outlined.

1. Training in the provision of services of district office staffs at the head office.
2. Short courses in specific aspects of fish processing and marketing.
3. Study trips to take initiative for or follow up new export opportunities.

Training in provision of services

Since this program started in February 1982, most of the member countries have sent one or several representatives to the project headquarters. The training plan, which takes about two weeks, starts with a survey of all project activities and programs. The representatives then become directly involved in some project activities and normally conduct studies on markets or products that are of special interest to the area that they represent. The results of this work may be published in the Infofish Marketing Digest or a separate publication.

These visits also make possible a dialogue between the main office and the district offices in such a way that they can jointly discuss goals and means. These periods have been found to be informative for both parties.

Specific courses

The intention is to include practical courses of direct relevance to the fishing industry only. The courses are aimed at personnel who work with fish processing at the management level and personnel in government or other institutions who are involved in the training of such personnel.

The first course was held in Penang in May 1983 and dealt with the quality control of shrimps and fish. One of the requirements for participation in this course was that the participating countries arrange such a course themselves.

Study trips

Due to budgetary restrictions, the project has not considered it appropriate to initiate any concrete study trips. Business trips should naturally be charged to the industry itself or to the national authorities. The project is, however, prepared to consider requests for certain well-defined study trips of limited duration. An example could be participation at a trade fair or similar events, where the trip would result in direct benefit to the industry.

9.6. Collaboration with regional and international institutions

Already at the planning phase of the project, other projects and organizations were consulted so that activities could be coordinated and possible overlapping or copying of tasks avoided. We will in this assignment not discuss in more detail what contacts the project has with various institutions, but will briefly mention the most essential collaborating organizations.

- South China Sea Fisheries Development and Coordinating Programme (SCSP)
- Project for the Development of Small-Svale Fisheries in the Bay of Bengal (BoBP)
- South Pacific Forum Fisheries Agency (SPFFA)
- Indo-Pacific Fishery Commission (IPFC)
- Asian Development Bank (AsDB)
- Southeast Asian Fisheries Development Centre (SEAFDEC)
- Association of Southeast Asian Nations (ASEAN)
- International Centre for Living Aquatic Resources Management (ICLARM)
- Economic and Social Commission for Asia and the Pacific (ESCAP)
- Indian Ocean Fisheries Commission and its subsidiary bodies (IOFC)
- International Trade Centre (ITC/UNCTAD/GATT)
- International Chamber of Commerce (ICC)
- INFOPESCA (Søsterprosjekt i Latin Amerika).

It seems that this activity will become a priority in the future. In a talk that he gave in Singapore, project manager W. Krone referred to the fact that there are a number of organizations in the area, but that several of these go their own way and in several cases carry on overlapping operations. What is needed is coordination and collaboration between the various bodies. Among concrete examples where collaboration should be initiated as soon as possible are mentioned product standardization, product development, shipping regulations, financing and joint ventures. All these needs are distinctly channelled through the operations of Infofish. 74

10. CONCLUSION

Data, information and knowledge are important factors of production that are steadily gaining greater topical interest. Information is an essential power factor (Hage, 1980; Hall, 1974), it reduces uncertainty (Galbraith, 1979) and is the alpha and omega of decision making. In most types of trade, the information flow is judged to be as important as the physical production flow itself (Van de Ven, 1976). This applies to the maintenance of trade connections in particular. The last few years have seen the emergence of a number of organizations or companies whose job it is to collect, process and disseminate information for external users. In other words, information has become a commodity like fish and vegetables. In this assignment, we have analyzed an organization whose very objective it is to disseminate market information and provide advisory services on fish and fish products in Asia and the Pacific region. Infofish, as the organization is called, was established to balance and promote trade between countries in and outside this region.

The first part of the assignment contained a theoretical examination of different problems associated with information, communication and the dissemination of knowledge in a distribution system. We gradually developed a model for the construction and analysis of an information system. We used this model as our framework in a case study of the Infofish project, which was examined in Part 2 of this report. We chose to discuss its structure and functions in a sequence consisting of five elements.

Step 1. Identification of the main decision areas of the system.

The information flow is intimately connected with the decision-making process. The more general goals of the project are summarized as the following decision areas:

a) to establish a joint market information centre or a forum for member countries where data can be collected, evaluated and distributed in an effective manner,

b) to supply technical advice to members, 76

c) to help develop a modern and effective fishing industry which produces quality products.

The decision areas can on this basis summarized as:

MARKET INFORMATION AND TECHNICAL ADVISE or, more specifically, information on subjects such as

- marketing opportunities
- consumer preferences
- product specifications
- trade regulations
- prices
- suppliers/supply
- processing technology

Step 2. Identification of levels at which each of these decisions is to be made.

In today's economy, producers do not sell their products directly to the ultimate consumer. There is frequently a channel structure between the producer and the consumer: a set of national or international, economic and sociopolitical environments through which both the physical flow of goods and the communication must pass. Each player (supplier, producer, distributor or regulating authority) is dependent on each other to be able to satisfy consumers in an effective manner.

Infofish has singled out the following main target groups:

1. Producers in Asia and the Pacific region (project region).
2. Exporters in the project region.
3. Importers all over the world.
4. Government authorities in the project region. 77

Most of the information is meant for the strategic level within the different institutions and has both long-range and short-range perspectives.

Step 3. Identification of the mission of the system.

Based on the objectives of the project, a 4-year plan containing the following tasks was developed for the project:

1. To establish a regional network with a management or advisory group.
2. To establish market information services.
3. To establish trade promotion services.
4. To provide technical advice.
5. To establish training programs.
6. To establish collaboration with other projects and organizations.

Step 4. Adaptation of the system.

In all information dissemination, the essential question is who brings what information to whom in which way to the best possible effect.

The head office has a management and staff department (administration, data base and library service) and three operational departments with some overlapping of services to assist with the information dissemination and provision of services.

The Department of Market Information concentrates on the longer-range goals of the whole distribution system. It disseminates information on most services of the project, with emphasis on market development, product development, marketing methods, and processing and equipment technology. This information is disseminated via Infofish Marketing Digest (every other month), special reports and publications. 78

The Department of Trade Promotion was established to promote trade transactions among members. The target groups are the buyers and sellers of fish products, which often means exporters, importers and domestic distributors. This linking takes place by letter, telephone or telex. The department also publishes a price and market report (Infofish Trade News) every 14. day.

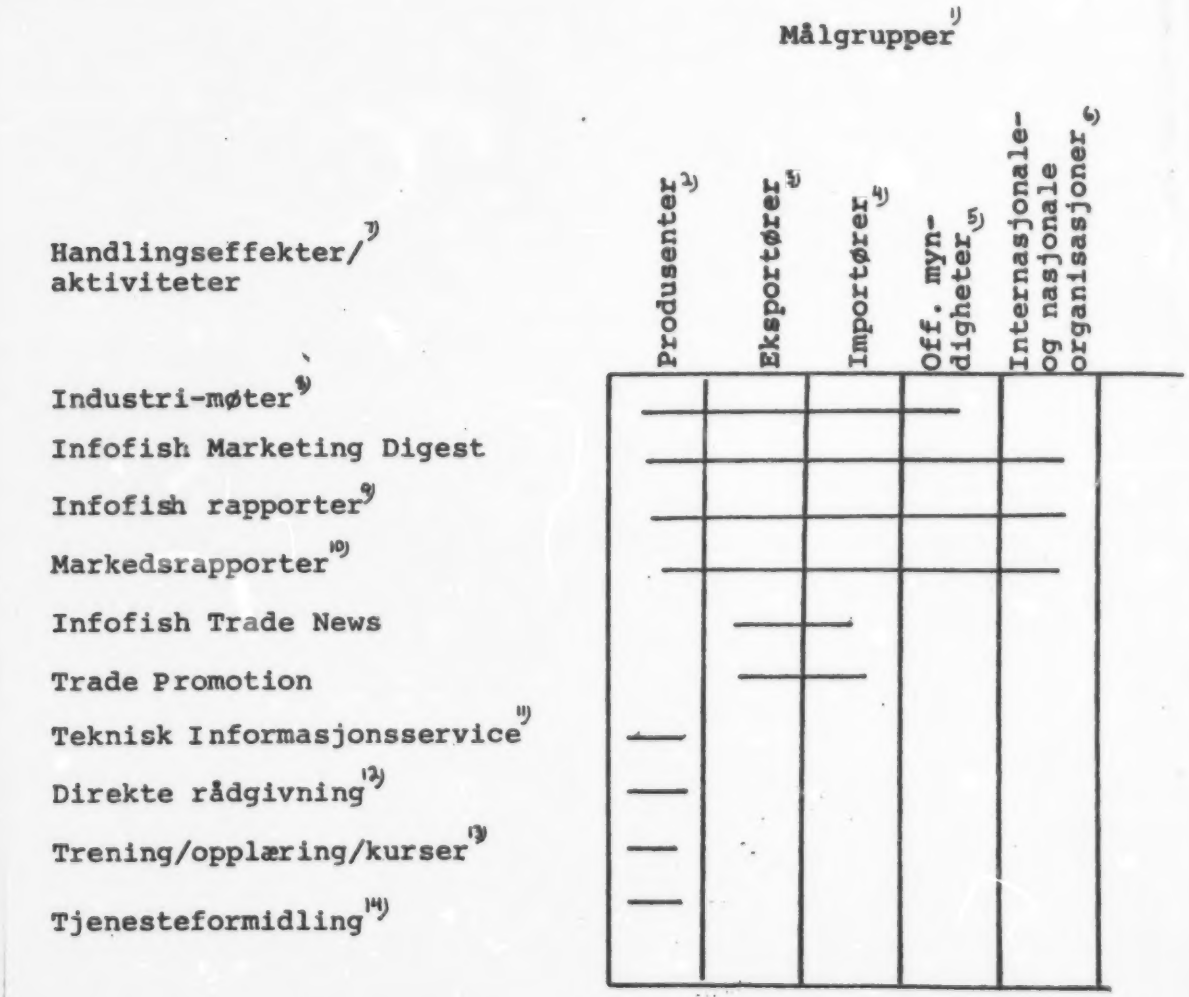
The Department for Technical Advice was established to assist production companies with information and advice on product improvement, quality control, packaging and production technology. The information is given by letter or telephone. Copies of relevant information are often attached, or the user is put in contact with experts or organizations that can help the industry directly.

District representatives are also used in all of the 18 member countries to help with the above tasks. These offices are to act as a connecting link (both executive and feedback-related) between the head office and the users. Communication takes place by letter, telephone, telex, and joint meetings, industry briefings and exchange programs (training at the head office).

Infofish has also arranged specific courses for the industry, travelled to orientation meetings, and it arranges contacts in fields where it itself does not have the resources to help. Bodies such as regional or international collaborating institutions are used for the latter purpose.

Even if the different activities involve overlapping tasks and target groups, it is quite possible to systematize them according to the time perspective of the information and according to the target groups that they were primarily set up to serve. We have done this in the table below. 79

Key: 1) Target groups 2) Producers 3) Exporters 4) Importers
5) Government authorities 6) International and national organizations
7) Functions/activities 8) Industry meetings 9) Infofish reports
10) Market reports 11) Technical Information Service 12) Direct advice
13) Training/courses 14) Service provision



Infofish reports and journals (the Digest) often have a strategic and long-range perspective and seek to reach most of the target groups. Information in the Digest may be more general than that found in the special reports even if the Digest also has a special focus in each issue. Trade News and the Department of Trade Promotion have a short-range time horizon and primarily help exporters and importers. Technical advice is primarily aimed at production and has a medium-range perspective. This information is not as detailed as that of the Department of Trade Promotion but not as general as under market information (e.g. the Digest), either. 80

Step 5. Management and control of the system

The project is managed from the main office in Kuala Lumpur. To make sure that its work agrees with the wishes of the users, a feedback mechanism using reader or user surveys has been developed. Feedback is also requested from the district offices and the advisory and guidance committee (which is meant to be a management group). Collaboration with the central authorities is an important part of the management and control system. The funding authorities (in this case Norway and Malaysia) as well as the FAO constitute the controlling part of the Infofish project.

To which extent the project has met expectations may be a matter of opinion. It was not our intention in this assignment to evaluate the external effectiveness of the project, i.e. to which extent the project performs the right tasks for the right target groups. However, we absolutely believe that there is a need for market information and technical advice in the region. What might be debatable about the objectives of the project are the target groups that the information is destined for. The fishing industries of the 18 different countries of South-East Asia are by no means a homogeneous group and it is obvious that their needs are very different. The target groups are defined generally in the objectives of the project. The results of surveys undertaken also show that the effectiveness of project activities is greatest

in the case of middle-of-the-road companies, based on economic resources and the size. It is to this group that the majority of the companies belong and that can probably most easily be helped with the limited resources available to the project. As several of these countries have no experience in the production and distribution of fish and fish products, it also seems clear that the project has given useful information to the existing industry and the central authorities that handle fisheries questions.

We found several clear indications that that part of the industry that has directed its activities toward the export of fish on international markets has secured a stronger position in relation to their importers in countries such as the USA and Europe. As an American importer expressed himself about the project: "You are not doing a job for us, but a hell of a job for your exporters". It is obvious that an industry with better information has greater freedom when selecting trading partners, and it does not let itself be deceived so easily with regard to prices. A very interesting question is whether the project is promoting production and distribution within or between the countries of the region. There is some proof that the latter is true. The authorities pressuring the industry to export in order to bring in foreign valuta may also have a dampening effect on the local consumption of fish. The need for protein is in some of these countries great and growing. 81

Setting aside the assumption that the project has hit the mark with regard its mission and target groups, we are, on the other hand, well able to evaluate the internal effectiveness of the project. Having spent two months at the project surveying all its activities and its performance, we can only note that their way of doing things was absolutely effective and correct. There are hardly many development projects that are working in a way as goal- and performance-oriented as Infofish. If the results achieved are compared to

the objectives outlined, they will be found to agree to a great extent. Infofish also showed great interest in changing its mission in step with the needs of the industry.

Some uncertainty about the future status of the project could be detected among the project staff. This can be explained on the basis of the current uncertainty about the future financing of project activities. If the project is to survive once the external financing comes to an end, a lot of time and energy must probably be spent to obtain income and government financing.

We will not discuss this problem here but will only point out this is an important reason why the target groups could easily change, and that these target groups will later define the mission of the project. The question remains whether the project will then have a developmental profile. 82

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APPENDIX

1. Subject areas for market information - "the subject agenda".
2. Infofish data base.
3. Infofish Marketing Digest - a distribution overview.
4. Infofish reports and market studies.
5. Trade promotion activities broken down into
   - country
   - processing method
   - type of fish

Emneområder for markedsinformasjon "the subject agenda".
Subject areas for market information

Twenty-five Categories for a Global Business Intelligence System

Category	Coverage
I. Market Information	
1. Market potential	Information indicating potential demand for products, including the status and prospects of existing company products in existing markets.
2. Consumer/customer attitudes & behavior	Information and attitudes, behavior, and needs of consumers and customers of existing and potential company products. Also included in this category are attitudes of investors toward a company's investment merit.
3. Channels of distribution	Availability, effectiveness, attitudes, and preferences of channel agents in company's system, a competitor's system or of independent distributors, wholesalers, retailers, and so on.
4. Communications media	Media availability, effectiveness, and cost.
5. Market sources	Availability, quality, and cost.
6. New products	Nontechnical information concerning new products for a company (this includes products that are already marketed by other countries), ideas, and market potential.
7. Competitive sales	Sales performance of competitive products.
8. Competitive marketing programs & plans	Marketing programs and plans (sales promotions, advertising, area coverage, etc.) for existing and for new products.
9. Competitive products	Prices and features for existing and proposed products.
10. Competitive operations	Information relating to a competitor's operating capability. Employee morale, transfers, production efficiency, and so on.
11. Competitive investments	Information concerning competitive investments, expansion plans, or moves. New capacity, investment proposals, indications of manufacturing resource commitments.
II. Prescriptive Information	
12. Foreign exchanges	Information concerning changes or expected changes in foreign exchange rates by exchange control authorities and immediate influences upon these authorities.
13. Foreign taxes	Information concerning decisions, intentions, and attitudes of foreign authorities regarding taxes upon earnings, dividends, and interest.
14. Other foreign prescriptions	All information concerning local, regional, or international authority guidelines, rulings, laws, decrees other than foreign exchange and tax matters affecting the operations, assets, or investments of a company.
15. U.S. government prescriptions	U.S. government incentives, controls, regulations, restraints, etc., affecting a company.
III. Resource Information	
16. Manpower	Availability of individuals and groups. Employment candidates, sources, strikes, etc.
17. Money	Availability and cost of money for company uses.
18. Raw material	Availability and cost.
19. Acquisitions and mergers	Leads or other information concerning potential acquisitions, mergers, or joint ventures.
IV. General Conditions	
20. Economic factors	Macroeconomic information dealing with broad factors, such as capital movements, rates of growth, economic structure, and economic geography.
21. Social factors	Social structure of society, customs, attitudes, and preferences.
22. Political factors	"Investment climate," meaning of elections, political change.
23. Scientific technological factors	Major developments with broad but relatively untested implications.
24. Management and administrative practices	Management and administrative practices and procedures concerning such matters as employee compensation, report procedure.
25. Other information	Information not assignable to another category.

Source: Warren J. Keegan.
Multinational Marketing Management,
Prentice Hall, New Jersey, 1980,
pp. 186.

Infofish data base and information centre.

The Infofish data base contains a file on fish products in Asia and the Pacific region, data relating to producers and exporters of these products in the region and importers of the same types of products all over the world. The data base also contains data on firms and institutions that the project corresponds with. The Technical Information Centre (Library Service) has a subject file, product file and country file. We will briefly describe the different files or registers below, first the data base in the EDB facility of the project, then the information on file in the library (Technical Information Centre).

A. DATA BASE

1. Product files (product catalogue).

These files contain detailed information on each product.

1. Product number
2. Trade name of product
3. Product species (Latin name)
4. Processing method (product form)
5. Remarks
6. Product description such as grade, type of packaging and size, etc.

With the help of different codes, an attempt is made to give various data in the product number itself. It consists of nine digits or symbols.

- the processing method (one digit)
- fish species (three symbols - FAO classification)

- product form (three digits - FAO classification)

An example of a product record is given below:

Product number:	**2SNA33230**
Trade name:	**Frozen fillets of red snapper**
Species:	**Red snapper**
Scientific name:	**Ljutanus aya**
Preservation method:	**Blast frozen**
Product form:	**Compete fillets, skinless and boneless**
Grading:	**2/4, 4/6, 6/8, 8/10 oz per fillet. Each fillet wrapped in cellophane paper and packed in 10 lb boxes, cardboard. 5 boxes to each carton, corrugated cardboard.**
Remarks:	
Date of updating:	**14/12/81**

2. Producer/exporter files

Each record contains the following items:

1. No. of company
2. Name of company
3. Address of company
4. Country
5. Contact person
6. Telephone No.
7. Telex No.
8. Telegram address
9. Date of updating
10. Date of last contact
11. Comments
12. Products

The company number contains some distinguishing symbols the same way as the product number does.

a) continent (one digit)

b) country (three digits/alphanumerical symbols)

c) exporter or importer (one number symbol)

d) record or identification number developed by Infofish (three digits)

The full record of a company may have the following format:

Company number:	IBGDIOOI
Name:	Beximco Foods Ltd
Address:	17 (New Dhanmandi R.A.
Country:	Bangladesh
Attention:	Managing Director
Tel.no.:	3177668-9
Telex no.:	
Cable address:	BEXIMCO
Update DT:	21/11/81
Contact:	21/11/81 2SNA 2TRE
Action:	29/11/81 TIC; 12/12/81 MYS, CAN, AUS
Comments:	Interested in improvement ideas and technical advice on product quality, packaging and presentation
Products:	2SNA33110 2TRE34001 OLOR43001

3. Importer file

Importer files are specified the same way as producer and exporter files. A number of search programs have also be developed to facilitate the search and the generation of output. The searching process, such as it functions today, is partially manual so that it is ultimately the project staff who decide which companies are to be put in contact with one another for the product in question. See the next few pages for a copy of a data base record.

1. Subject file

The subject file is divided into eight subgroups.

a) Quality control

b) Handling and processing

c) Marketing

d) Equipment

e) Organizations and programs

f) References

g) Fisheries

h) Other

Each subgroup is again divided into specific subjects such as forcemeat and packaging equipment, filleting, etc.

2. Product file

The product file is divided into general uses

- fresh and frozen fish
- canned products
- dried, smoked or salted

These are further divided into types of fish and product varieties.

3. Country file

The country register is divided into continents and countries. A more detailed description of files is given on the following 4 pages.